CENTRE AFRICAIN D'ETUDES SUPERIEURES EN GESTION

CESAG

MASTER IN BANQUE AND FINANCE

MBF

ACADEMIC YEAR: 2012 - 2013

Major: Financial Markets and Corporate finance

PROJECT PAPER

THEME :

ESTABLISHMENT OF A FOREIGN EXCHANGE DERIVATIVE MARKET IN THE GAMBIA

Superviseur :

Présenté par :

KABBA Baldeh

12th MBF Batch

Mr Modou DIENG

Temporary Lecturer in Finance at CESAG

Dakar, January 2014

DEDICATION

I dedicate this project work to my dare Brother **Bubacarr Baldeh**, without whom University education would have been an unrealizable dream.

ACKNOWLEDGEMENT

My gleeful thanks go to ACBF who have initiated this great Program Masters in Banking and Finance tailored to provide relevance knowledge to young African elites. I would also like to express my profound gratitude to the MBF coordinator, lecturers and invigilators such as Professor Bubacarr Baidari, Madam Santal Ouagdrawogo, Mr. Aboudou Ouattara, Mr. John Picou, and Mr. Jean Marcel Dalbarade for providing us the guidance during the course of the program and instilling in me a great deal of knowledge.

At the Family level I wish to express my profound gratitude to my parents for their support throughout my stay in Dakar.

I would also like to express my heartfelt gratitude to the Director of foreign Department, Omar .S.Jaata, Karafa Jorbarteh for their invaluable support throughout my course in Cesag.

I acknowledge the support of my supervisor, Mr Dieng MODOU for enabling me to sail my boat to shore through his invaluable assistances during the course of my project work.

And last my wholehearted gratitude goes to my adorable wife Mumi Baldeh for understanding me as I pursue a life long dream.

ABSTRACT
Establishment of a foreign exchange derivative market in the Gambia

Globalization and integration of financial markets, coupled with the progressively increasing cross-border flow of funds, have transformed the intensity of market risk, which, in turn, has made the issues relating to hedging of such risk exposures very critical.
Economic agents (Banks, importers exporters) in the Gambia are faced with perennial problem that is of foreign exchange volatility. Government and the NGOs are not exception to this phenomenon, as the external debt of the Gambia government is affected by exchange rate fluctuations. Prices for both food stuff and building material have risen, thus lowering the purchasing power of Gambians.
It is against this backdrop that this paper is written to find a remedy to current situation in the market.
This is proposing the establishment of foreign exchange derivative market in the Gambia. The proposed products of the derivative market are future contracts, options contracts.
We examined the requisite market and legal conditions for the establishment of foreign exchange derivative market. In a case where there is absence of the requisite market or legal framework a proposal is made. And also when the conditions are present but not adequate amelioration is recommended.
This paper also demonstrates the mechanism of pricing the derivative products and their financial impact on firms, banks and exporters.
The importance of this study is to provide a platform for which business could unbundle and redistribute risk through hedging, allow for price discovery and increase the inflow of global resources into the Gambia.
It is recommended that policy makers should pass the law allowing the development of a derivatives market. With effective investor education, the Gambia could start gradually in establishing a foreign exchange derivative market.

Key Words: Currency derivative, Financial markets, The Gambia

==========

RESUME
Mise en place d'un marché de produits dérivés de change en Gambie

La globalisation et l'intégration, couplé avec la croissance constante des flux de capitaux trans nationaux ont augmenté drastiquement l'intensité des risque de marché qui à son tour a rendu délicat la couverture de ces risques.
Les Agents économiques (les banques, importateurs et exportateurs) en Gambie sont confrontés au problème récurrent de la volatilité de taux de change. Le gouvernement et les Organismes Non Gouvernementaux n'échappent pas à ce phénomène ; ainsi, la dette extérieure de la Gambie est influencée par les fluctuations du taux de change. Les prix des denrées alimentaires et les matériaux de construction ont augmenté, réduisant ainsi le pouvoir d'achat des Gambiens.
C'est dans cette situation que ce document est produit afin d'apporter une solution à cette situation. Il propose de mettre en place un marché de produits dérivés sur taux de change afin de mettre à la disposition des acteurs des futures et des options négociables sur change. Il aborde les conditions préalables pour la création du marché de produits dérivés, sur le plan légal et environnemental. Lorsque les conditions ne sont pas réunies, il propose les voies et moyens pour résoudre cette difficulté.
Les modèles de pricing pour les deux produits introduits dans le marché seront également proposés. L'intérêt de ce projet est de fournir une plateforme permettant de dénouer les transactions et redistribué les risques à travers la couverture ; cette plateforme permet de reveler les prix et d'accroître les échanges de ressources en Gambie.
En dernière position, nous proposons des recommandations pour la mise en place d'une loi de création du marché de dérivés de taux de change.

Mot Clés : Dérivé de change, les marchés financiers, Gambie

LIST OF ABBREVIATIONS

BIS: Bank for international settlements

CAD: Canadian Dollar

CBG: Central Bank of the Gambia

CHF: Swiss Franc

EUR: Euro

FXD: Foreign Exchange Derivative

GBP: Great Britain Pound Sterling

GMD: The Gambian Dalasi

GPMB: The Gambia Public Marketing Board

GXDM: Gambia Exchanged Derivative Market

JPY: Japanese Yen

OTC: Over the counter currency derivative.

USD: United States Dollar

WACB: West African Currency Board

LIST OF TABLE AND FIGURES

TABLES

FIGURES

SUMMARY

INTRODUCTION

After independence in 1965, the Gambia decided to adopt its own Currency Board in 1971 and took over from the West Africa Currency Board (WACB). The central bank of the Gambia (CBG) was also established in 1971, thus it inherited all the assets previously held by the WACB. The Dalasi was adopted in 1971.

Before the liberalization of the Gambian economy in 1986 the Gambia had a fixed exchange rate regime. The fixed exchange regime favored credit allocation to the agricultural sector. The Gambia Public Marketing Board (GPMB) bought groundnuts from the farmers at a much higher price then quoted price in the international markets. The continued subsidization of the agricultural sector by the government increased government level of debt to the international world, thus serving as a catalyst to economic crisis of 1986, in the Gambia.

The liberalization of the Gambian economy in 1986 gave birth to the shift of exchange rate regime to floating exchange rate regime. This means that the domestic currency (Dalasi) was no longer fixed to the pound but rather to be determined by market forces of demand and supply in the interbank market.

The floating exchange rate regime and the liberalization of the economy also meant that restriction on current and capital transaction was to be lifted. Under this new circumstance the commercial banks were allowed to quote domestic currency (USD, GBP, EURO, CHF, CAD, and JPY) against the major traded currency without restriction from the Central Bank.

An academic paper written by Camara Lamin, 2008, on the foreign exchange exposure in Gambia's banking industry "the case of Guaranty Trust Bank Ltd" concluded, among others, that Gambian banks were exposed to foreign exchange risk and recommended that the development of the derivative market would help mitigate currency risk exposure.

According to Camara Lamin, 2008, Data from the CBG, since 1997, showed a gradual depreciation of the Dalasi against the major traded currencies (USD, GBP, EUR, CHF, etc). However, this situation exploded when the Dalasi (GMD) recorded an unprecedented gain against the majored traded currencies (budget speech 2008 p. 321). Commercial Banks suffered huge losses on asset revaluation.

In addition, the Central bank of the Gambia annual report 2008 revealed that Gambian Banks suffered significant loses due to their exchange risk exposure.

The development of a derivative market in the Gambia would allow banks and investors to shift their exchange rate risk exposure at the same time enhance price discovery of the market.

On the other hand, in 2007 annual report of the CBG revealed that in, 2007, profitability of commercial banks in the Gambia declined by 26.0 percent compared to 2006. The drop in profitability was mainly driven by sharp increase in interest rates and huge revaluation losses experienced by banks due to the sudden appreciation of the domestic currency over the foreign currencies.

The establishment of a derivative market would invariably help lengthened the maturities of fixed income interest rates issued by government through the futures market.

Overtime as the immediate adjustment of the economy was addressed; the focus of monetary policy was broadened. The monetary tools outlined were; reserve requirement, Open Market Operations, credit and interest rate policy. The Gambia system of interest rate determinants was reformed in July 1986 as part of Economic Recovery Program (ERP).The CBG move to operate a flexible interest rate regime through commercial banks bidding of bi-weekly tender notice in the Opened market operations, enhanced resource mobilization with the banking sector. The main objective of the policy was to mop up the excess liquidity in the economy so as to alleviate the pressure on the exchange rate of the Dalasi.

However, since the establishment of non interventionist interest rate policy, market interest rates have been highly volatile. In 2007, sharp increased in interest rates caused huge losses in the financial sector.

The establishment of a foreign exchange derivative market in the financial sector will give banks and market participants the rare opportunity to hedge against foreign exchange risk, therefore, enhancing financial stability and the smoothening of the yield curve by lengthening of the maturities of assets.

Without going further a clear definition of derivative could be essential in contextualizing our topic. Derivatives as defined by financial economics *are a financial contract whose*

value is derived from an underlying asset or commodity price, an index, rate or event. They commonly go by names such as forward, future, option, and swap and they are often embedded in hybrid or structured securities.

Derivatives have a long history early trading can be traced back to Venice in the 12th century. Credit derivative deals at that period took the form of loans to fund a ship expedition with some insurance on the ship not returning. Later in the 16th century, derivatives contracts on commodities emerged. During that time, the slow speed in communication and high transportation costs presented key problems for traders. Merchants thus used derivatives contracts to allow farmers to lock in the price of a standardized grade of their products at a later delivery date.

This report of the project will be organized into four chapters:

Chapter one presents the background of the project

Chapter Two is based on diagnosis of the Gambian economy for the establishment of foreign exchange derivative market

Chapter three will treat the design and the establishment of the derivative market and the products to be introduced in the market.

Chapter four will deal with the project's cost viability and profitability

CHAPTER ONE:
BACKGROUND OF THE PROJECT

1.1 Review on the theoretical and practical application of foreign exchange derivatives

A brief definition of the Foreign exchange derivative market is vital in a move to frame our literature review. Foreign exchange derivative is an asset whose underlying value is derived from a currency. The exchange rate of a future cash flow is normally affected by exchange rate movements.

In theoretical terms it is believed that the establishment of a foreign exchange derivative would on the one hand help markets and firms to hedge against foreign exchange risk .On the other, it is wildly believe that firms will use currency derivative to speculate thus creating market destabilization. Moreover there are theories that purported that hedging is not efficient as a risk mitigating instrument.

According to the classic Modigliani and Miller paradigm, foreign exchange risk management is irrelevant to the firm. They argued that shareholders can do it on their own through well diversified portfolios'

Another theory that propounded on that is the international Fisher effect; it states that exchange rates changes are balanced out by interest rates changes, the Purchasing Power Parity theory suggests that exchange rate changes will be offset by changes in relative price indices/inflation since the Law of One Price should hold. Both these theories suggest that exchange rate changes are evened out in some form or the other.

Also, the Unbiased Forward Rate theory suggests that locking in the forward exchange rate offers the same expected return and is an unbiased indicator of the future spot rate.

But the pit fall for these theories is the assumption of perfect markets under homogeneous tax regimes. There is no market in the world that is perfect thus rendering the theories inapplicable in real life situation Also, exchange rate-linked changes in factors like inflation and interest rates take time to adjust and in the meanwhile firms stand to lose out on adverse movements of exchange rates.

The existence of different kinds of market imperfections, such as incomplete financial markets, positive transaction and information costs, probability of financial distress, and

agency costs and restrictions on free trade makes foreign exchange management an appropriate concern for corporate management. (Giddy and Dufey, 1992)

It has also been argued that a hedge firm can secure debt easily thus reducing tax. There have been empirical evidence that hedging is an efficient tool for the management of foreign exchange risk Example, firms use of currency derivative is positively related to growth opportunities (Gecy&Minton) and this conclusion is consistent with, root, Scharfstein, and Stein (1993).

Another recent studies is Allayanis and Ofek (2001) use a multivariate analysis on a sample of S&P 500 nonfinancial firms and calculate a firms exchange-rate exposure using the ratio of foreign sales to total sales as a proxy and isolate the impact of use of foreign currency derivatives (part of foreign exchange risk management) on a firm's foreign exchange exposures. They find a statistically significant association

1.2 Derivatives products

1.2.1 Forward contract

A forward contract is a contract whereby two parties agree to exchange the underlying asset at a predetermined point in time in the future at fixed price. The buyer agrees today to buy a certain asset in the future and the seller agrees to deliver that asset at that point in time, in the future.

Forward contract is the simplest form of derivative contract. In addition, forward contract is a cash market transaction, the price of which is determined on the initial trade date, but the delivery is made in the future

Highly customized - Counterparties can determine and define the terms and features to fit their specific needs, including when delivery will take place and the exact identity of the underlying asset.

All parties are exposed to counterparty default risk - This is the risk that the other party may not make the required delivery or payment.

Transactions take place in large, private and largely unregulated markets consisting of banks, investment banks, government and corporations.

Underlying assets can be stocks, bonds, foreign currencies, commodities or some combination thereof. The underlying asset could even be interest rates.

They tend to be held to maturity and have little or no market liquidity.

The inter-bank lending and borrowing rate is very crucial in the establishment of forward contracts. According to the interest rate parity theory, the differences in interest rate

determine the future exchange rate between two countries. A forward contract is determined by the expected interest rate in the inter-bank market in the future.

$$F = Se * \frac{[1+r(T-t)}{1+r*(T-t)}$$

$$Point = Se * \frac{[1 + rUSD * \left(\frac{90days}{360}\right)]}{[1 + rGMD * \left(\frac{90days}{360}\right)]} - Se$$

Table 1 Bid/Ask interest rates for foreign and domestic

	Bid	Ask
Interest rate GMD	5.23%	8.36%
Interest ret USD	1.25%	1.95%

The Gambia fisheries company is expecting revenues in three months time in USD after exporting Cat fish to Sea food fish Company in the USD. However, the Gambia fisheries are expecting the GMD to appreciate against the USD in three months time. The Gambia fisheries company entered into a forward contract with Trust Bank Gambia LTD. How can we price the Forward contract?

The steps:

The exporter is going to sell USD to trust bank Ltd and receive GMD

The banks is going to buy USD from the exporter deliver GMD

The bank will borrow USD at the interest rate of USD 1.95%

Convert the USD to GMD and invest it at an interest rate of 5.23%

The Forward points

Points= 36.25*[1+1.95*(90/360)] -36.25

[1+5.23*(90/360)]

Forward points > 0 we have a premium

Thus a forward contract, $F = Se + points \mp margin$

1.2.2 Options Contracts

1.2.2.1 Definition

Option is a very powerful financial tool, because it is optional for the purchaser but binding for the seller. Options contract allow those who are not willing to take adverse fluctuations of currency risk to pass it on to speculators and options writers. Options are derivative contracts that grant the purchaser the right (call option) but not the obligation, seller (put option) the obligation to sell at a prearranged price call the (strike price), at a future date hold to expiration (European option) or at any time before the expiry date (American options) For the options holder to benefit from these privileges he would have to pay a price call a premium.

Table 2 Long Call and Short put

	Right to BUY CALL	Right to Sell PUT
Pays a premium	Reserve the right to buy an underlying asset	Reserve the right to sell an underlying asset
Receives a premium	Obligated to deliver and underlying asset	Obligated to receive an underlying asset

The are different kind of Options namely call option and put options.

Call option give the holder the right (not the obligation) to purchase an underlying asset at a specified price (strike) at a determined period of time. The buyer of the call options pays a certain price call the premium to exercise this right. The buyer of an option is anticipating the rise of prices, thus he will try to cover his long position in such a way that if prices should rise he will exercise his options but on the other hand if prices should fall he will leave his option to expire.

A Put Option contract grants the purchaser the right but not the obligation to sell the underlying Currency Future at a predetermined price at a predetermined date. The price expectation of a put option is that the seller anticipates that the prices of an underlying currency are going to fall. In this case, the seller of an option receive premium.

There are two type of option contracts (call and put).In every position there is a buyer and a seller, consequently there are four possible positions in an option contract.

Long call: is when a market dealer buys the right to buy currency A against Currency B

Short call: is when a market player sells the right to buy currency A against currency B

Long put: is when a market dealer buy the right to sell currency A against currency B

Short put: is when a market dealer sells the right to sell Currency A against currency B

Table 3 Forecasted positions of foreign currencies against the GMD

The GMD(weakens)	The GMD (strenghtens)
Buy call	Sell Call
Sell Put	Buy Put

Companies are influenced to buy option principally to hedge their foreign exchange exposure. In the case of the Gambia an exporting firm that have a long position in a currency will consequently buy a put to hedge against adverse exchange movements.

On the other hand an importing firm who has short position would hedge against the appreciation of the currency that he is going to pay to make his imports. In this scenario, the firm will buy a call option

Table 4 Features of Options

	CALL	PUT
Anticipation	Rise in the exchange rate	Fall in the exchange rate
Right	Buy a an underlying asset at the strike price	Sell an underlying asset at the strike price
Obligation	Pay a premium	Payment of premium
Risk	Losses limited to premium	Losses limited to the premium

The seller of an option contract unlike the buyer of an option receives a premium and promises to deliver the underlying asset in the future. In the jurisprudence the seller of an option obligated to deliver the asset upon the buyer's request. Thus the option seller is faced with unlimited risk.

Table 5 Selling of an option

	CALL	PUT
Anticipation	Fall or stability in the exchange rate	Rise or stability the exchange rate
Right	Receives premium	Receives premium
Obligation	Deliver the underlying asset	Take delivery of the underlying asset
Risk	Unlimited losses	Unlimited losses

1.2.2.2 Valuation of an option contract

The value of an option is the amount that a buyer of an option will pay to the seller at the time of closing the deal. This may also represent the price that the buyer is will to pay in order to benefit from the options advantages in the future

The intrinsic value of an option is the difference if it's positive between the exchange rate at the expiration date and its strike price.

The intrinsic value of a Call: $C_T = \max(0, S_T - K)$

The intrinsic value of a put option is the difference if positive between the strike price of the option and the exchange rate at expiration date of the underlying currency.

The value of a Put: $P_T = \max(0, K - S_T)$

Time value as defined inters earlier is the difference between the premium that a buyer of an option contract has paid and the intrinsic value of the underlying option.

An example can be drawn from an American option which can be exercise at any time of its life period. The premium of an option is GMD4 and the intrinsic value is GMD 2. Therefore the time value is GMD 2.

Time value of a Call: premium- Intrinsic value

It is important to note that the intrinsic value of an option depends on three cateria, whether the option is: in the money, at the money and out of the money.

1.2.2.3 Option pricing

Option pricing has been the biggest problem that financial engineers have been battling with for a long time. Option trader has been using option without actually been able to determine the fair value of their option in the market.

Option been a financial product, it is therefore important to determine its price, like the way investors can determine the fair value of a firm.

Since then there have been many models used in the determining the price of an option. However the most recognized models used in the pricing of an option are: the Black & schools Model, Cox, Ross, Rubenstein Model and German & Kohl Hagen model. The choice of a model depends on the nature of the underlying asset and the type of the option..

Instance, we can example with the American option were we can exercise the option before expiry; in this case we use the binomial tree model to price our option. In addition in a currency option it is optimal for an American call option type to be exercised before expiration in a currency with high interest rate. And it is optimal; to exercise an American Put option when the interest rate of the currency is considerably low.

Since the European option is exercise at expiration, thus it is the combination of the American option. In the European option the black & Scholes model is used in its valuation. We also use the risk neutral valuation of Cox and Ross to value the European options. But this model is also constructed on tree based method to value stock

The formula for the valuation of European call option and a put option was proposed by Garmann and Kohl Hagen which is like that of the Cox, Ross, both an evolution of the Black and Scholes model.

1.2.2.3.1 The principles of black and Scholes models.

Buying an option, an investor is faced with a possible pay off risk profile at the date of expiration. Discounting method is used to actualize future cash flow to the present value. To know the payoff of an option you have to know the:

Expected future cash flow (pay off)

A convenient discounting rate i.e. is the rate of return in the market.

However, in the case of an option it is impossible to determine the expected future cash flow and the discounting rate of return, considering the fact the price of an option is based on many factors. In view of the above to price option using Black and Scholes model we imagine that our constructed portfolio have no risk while taken in to consideration the movement of the underlying asset and the option.

1.2.2.3.2 German & Kohl Hagen currency derivative option pricing.

German & Kohl Hagen Model formula of currency valuation followed Black and Scholes line of thought by replicating almost the same equation but with different assumptions, such as it easy to convert domestic currency to foreign currency etc.

The Garman Kohl Hagen model generalizes the standard Black-Scholes model to include two interest rates – one for a domestic currency, and one for a foreign currency. The dividend yield is replaced by the foreign currency interest rate. The size of the interest rate gap between a foreign and domestic currency affects the pricing of these options.

The model was published in 1976 by Mark Garman and Steven Kohl Hagen, and predicts that foreign exchange options are cheaper than standard European option for a call but more expensive for a put. The formula below demonstrates this prediction.

$C = Se^{-reT}N(d_1) - Ke^{-rT}N(d_2)$, $P = Ke^{-rT}N(-d_2) - Se^{-reT}N(d_1)$

$$d_1 = \frac{\ln\frac{S}{k} + (r - re + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}} \quad \text{and} \quad d2 = \frac{\ln\frac{S}{k} + (r - re - \frac{\sigma^2}{2})T}{\sigma\sqrt{T}}$$

Where

r :domestic interest rate

re: foreign interest rate

S: spot rate

K: strike price

T: duration

C: call option

P: put option

σ: volatility

1.2.2.4. The determinants of option prices

Change in the underlying asset(S) price can increase or decrease the value of the option. These price changes have an opposite effects on Calls and Puts As the value of an underlying asset rises, a call will generally increase and the value of the Put will generally decrease in price

Strike price (K) of a call option is lower, the higher the strike price of the underlying currency. Because the higher the strike price the less chance of been in the money.

In the same vain, the price of a put option is higher the higher the strike price because there is lees chance the spot rate is going to pass the strike price.

The time (T-t) to expiry influences the time value of the option as the longer the time to expiry results in more trading time for the option to pass it strike price.

Volatility (V) which is measure by the standard deviation; it is the measure of the variation of the exchange rate of a currency relative to its average movement. Higher the standard deviation, higher the fluctuation of the underlying currency, thus increases the probability that the spot price will pass the strike price of the underlying currency, therefore the higher the price.

Risk free interest rate(r) has a big effect on the currency derivative as they are the basis for the pricing of a currency option.

1.3 Currency Swaps

A swap could be defined as agreement between counter-parties to exchange cash flows at specified future times to pre-specified conditions. A swap is equivalent to a coupon bearing asset plus a coupon bearing liability. The coupon might be fixed or floating. In addition a swap is also equivalent to a portfolio, or strip, of forward contracts-each with a different maturity date, and each with the same forward price.

In a currency swap the principal is exchanged at the beginning of the period, unlike the interest rate swap the notional amount is exchange at a future period. In currency swaps the direction of the cash flows at time zero is the opposite of the direction of the subsequent cash flows in the swap

There are two type of currency swaps namely fixed to fixed swaps and floating for fixed exchange currency swaps.

A fixed to fixed swap is when two counter-parties agreed to get in to a currency swap for refinancing purposes given the fact each of them have a comparative advantage in financing in their own currency.

A floating to fixed currency exchange swap is where two parties enter into a currency swap where one party pays a fixed and receive floating and the other party Pays a floating and receives fixed.

In general swaps are normally using for long term investments purposes. This is why it is more associated for debt financing and currency placements. Swaps allow us not only to hedge against exchange rate risk but also as leverage for funding in the money market.

1.4 Practical aspect of Currency derivatives

Currency derivative market has been in existence for more than a century. The first currency derivative market to ever register a remarkable success in real times is the Chicago Mercantile Exchange. In a broader view we are going to look into the practical aspects of currency derivative market in developed economies, emerging economies, SADC countries and Sub-Saharan Africa and their impact on financial stability in the diverse world.

1.4.1 Developed economies currency derivatives

The foreign exchange derivative market was first created in the Chicago Mercantile Exchange in 1972; just few months after the dissolution of the Breton Woods Accord. This was quite a significant step for the US companies to Hedge against foreign exchange risk. A paper written by George Allayannis page 3, quoted that Jorion (1990) Amihud (1993) and Bodner & Gentry (1993) conclude that multinational corporations' importers and exporters were not significantly exposed to foreign exchange risk. The explanations were that importers and exporters extensively used foreign exchange derivative instruments to hedge their foreign exchange exposures. There has been empirical evidence that US multinational companies use of currency derivative has helped to leveled the risk exposure of many firms in the US. In the Example of Makar and Huffman (1997) examining the use FX derivative as positively correlated with foreign exchange exposure and this is substantiated by the test results done by Marston & Smithson (1995) Bartov, Bodnar and Kaul (1996).

It is obvious that any firm that wants to flourish in the international world cannot ignore the movements of foreign exchange rates. A typical example of US firms whose large changes in exchange rate movement led to the dramatic changes of its competitive structure is Caterpillar and Kodak. Previously these two companies held a comfortable market share just

to be driven by the large scale exchange movements. In addition to that is the German's car producer's volkswagen1.

According to report by Seema and Menon, page 13, revealed that as the firm's level of foreign involvement increases, the rate at which foreign earnings affects their cash flow and reported earnings will also increase due to a higher level of foreign currency exposure. In turn, firms will increase their use of FXD to hedge against the negative effects of currency risk directly related operations.

In the United Kingdom, the closure of the Gold window and the adoption of the Breton Woods accord left UK's firms and financial institutions exposed to currency risk. The developments of a currency derivative market is vital in the stabilization of prices, given the fact that portfolio diversification by investors is not sufficient to fully hedge the exchange exposure.

UK developed forward and futures contracts in 1972 immediately after the Bretons wood accords. This was followed by the currency swaps in 1981 and options contracts in 1982. The impact of currency derivative market in the UK cannot be over sighted. Just like stated in other countries, traders and investors may use the derivative market for speculative purpose instead of hedging purposes. An example can be cited on one of UK's oldest banks, BARING Bank (top stories Baring page 162). A trader in this bank took an unauthorized position on the exchange-traded options and future contracts, mostly on Nikkei 225 stock index futures contracts and unhedged $27 billion. Losses were close to $1 billion when the market moved unfavorably against the trader's speculative position, exceeding the banks entire equity, forcing the bank's collapse in 1995.This is a clear testimony of what the derivative market could result in when these tools are miss used.

1.4.2 Emerging economies currency derivative

The currency derivative in the emerging countries such as Brazil has been very instrumental in the hedging of foreign exchange risk by financial and non-financial institutions. Before the derivative market, the Brazilian firms used traditional hedging to reduce their risk exposures. This technique involves the matching of current assets and current liabilities

denominated in foreign currencies. However the former was not the effective method in mitigating risk until the introduction of the BMF exchange derivative.

Brazil as any other emerging economy has a high level of currency exposure due to its financial institutions and firms involvement in imports and export trade.

The Brazil stock exchange was created in 1979 and started trading futures and options on individual stocks. After some years later the Brazilian Futures Exchange (Bolsa Brasilia de Futuros-BBF) and BM&F were created in 1983, and 1986 respectively. The main reason for the establishment of the currency derivative in market was to hedge the high currency risk exposure owing the high level of inflation coupled with the high level of currency volatility in the international market.

However, the market investors instead of hedging resorted to speculation, thus strengthening the Brazilian Real against the major traded currencies. The rallying of the Real has led to the intervention of monetary policy with unorthodox monetary kits such as the 1 percent charges of every foreign exchange derivative transaction. Further to that the government has levied 1 percent tax on every foreign exchange derivative transaction as at 11 May 2013.

In India, the introduction of currency derivative in India is a remarkable event which degenerated to a boom for importers, exporters, corporate and forex dealers. The currency derivative was introduced in India, August 2008. The Indian currency market has grown phenomenally; at inception it had a daily trading of Rs 800 crore It is currently trading at RS 4500 crore on daily basis, which is higher than the commodity market. This as mention earlier was to help market players to hedge against currency fluctuations. The currency derivative products in India are forwards, futures options and swaps. Among these products introduced in the financial markets firms in India have shown some preference to some products to others.

According to a study made by Dr Hiren.M. Maniar after studying the use of hedging instruments by major Indian firms in different sectors, he concluded that forwards and options are preferred as short term hedging instruments while swaps are preferred as long term hedging instruments.

However despite its advantage of mobilization of capital and liquidity creation, the currency derivative market in India has also known quite a number of abnormalities and therefore even warranting the emanating ban of some of its products by the Reserve Bank of India. Companies with large foreign exchange like Infosys, Wipro and Essarn tools such as zero cost structure-an inexpensive ,attractive, with their leverage nature, is according to the reserve bank of India the root cause of the problem plaguing the market. But firms argued, the banning of the currency derivative market would invariably lose their competitiveness through the lack of flexibility in managing exchange rate risk

1.4.3 SADC COUNTRIES CURRENCY DERIVATIVES

Johannesburg Stock Exchange (JSE) was established in 1887. However it was until a century after that foreign exchange derivative was established. JSE commenced trading the Rand in currency futures Yield X on the 2 June 2007, this was as part of exchange reformed announced in 2007.In a move to restrict the Yield X platform from armatures endorsement is base on a pre- trading and not post trading checking.

According to reports JSE reaches R500 billion in the foreign exchange derivative in its total value traded milestone on 06 May 2013. This was attributed to the markets increased precision in mitigating exchange rate exposure of financial institutions, markets markers and customers (Geers).With the development of the currency derivative market, firms in the South Africa has increased the use of currency derivative to hedge against foreign exchange exposure.

A study by DR Glen Holman revealed that more than 90 percent of South African firms use derivatives compared to 50 percent in the US The study further revealed that the type of risk hedged by South African companies is 74 percent FX risk and 62 percent interest rate risk etc. The high level use of South Africa's derivative ranked it as part of the emerging economies

In 2009, the governor of the central bank of Mauritius was quoted as saying the financial system of the Mauritius was incomplete without the establishment of a currency derivative market. Global Board of Trade (GBOT) an international multi-asset exchange based in Mauritius was established on 15th October 2010.It is the first multi exchange asset to be created in Africa. It offers an electronic exchange platform with efficient clearing and settlement systems to ensure counterparty guarantee for all trades. The GBOT trades

commodity and currency derivative products including precious and base metals, energy, "soft" agricultural commodities, as well as currency derivatives starting with six currencies on its electronic exchange platform. Just two weeks after the commencement of the GBOT operation it reported a daily volume of 50 million dollars. However currency derivative of Mauritius has also known many upheavals where recrimination of exporters has been the ordered of the day, some when to extend of laying offs their employees.

This mayhem continued to accentuate, firms in Mauritius such as Air Mauritius and the State trading corporations almost declared bankruptcy as a result of miss using of currency derivative instruments.

Nevertheless in 2009 the Mauritius central bank governor re-iterated the misuse and abuse of a financial instrument do not render the instrument useless. Some statistic highlighted that the export oriented economy plays a vital role in the economy. Exports constitute 6 percent of GDP and provide employment to 5600 persons. Thus the establishment of the currency derivative market has amplified the revenues in this sector. Furthermore the Sugar cane industry is non-exception to in the light of the benefits that the GBOT has brought to the country. The Sugar cane industry uses forward and futures contracts to hedge against foreign exchange exposure

1.4.4 SUB-SAHARAN AFRICA

The road for African countries to deepen their financial system has been very bumpy. South Africa and Mauritius establishment of currency derivative can be lessons to be drawn by sub-Saharan African countries. Most Sub-Saharan African countries have very shallow financial systems owing to the fact their level of financial sophistication is still inadequate to guarantee the high level of liquidity in the market.

Since after the adoption of floating exchange regime in South Africa and Mauritius these two countries which have been face by improved level of capital inflows are no doubt faced with high currency volatility. Thus the development of currency derivative markets in these countries helped curb currency volatility arising as a result of high inflows. Therefore countries in Sub-Saharan African can humbly take giant step to emulate these sister countries in a move to further deepen their financial system and entice investors.

The Central Bank of Nigeria approved derivative products to enable dealers and market operators to use foreign exchange derivatives to hedge against unprecedented losses arising from FX fluctuations on the 03 February 2011.The derivatives products approved to authorized dealers are FX Options, Forwards (Outright and Non-Deliverable), FX Swaps and Cross-Currency Interest Rate Swap. The Nigerian central Bank issued its guideline for the regulation of the foreign exchange derivative market on the 22 March 2011.

Literature reviews on the financial sector adduce that the establishment of a foreign exchange derivative market is beneficial not only to financial investors, market makers and dealers but also deepen the financial sector, increase liquidity and mobiles capital for economic growth.

First, effective derivatives market can help Nigeria economic agents to manage risks, thereby enhancing the nation's economic efficiency. Some of the risk Nigeria economy is exposed include: inflation, excessive dependency on foreign economics, foreign trade prices, foreign currency and foreign interest rates.

Second, effective derivative market can enhance liquidity in Nigeria economy through shift of risk (currency and default) and futures contract or option before the expiration date at the derivative exchange.

Finally, a derivatives exchange can attract more foreign investments to Nigeria. Thus, provides a medium through which foreign investors can reduce foreign-exchange risk regarding investments return.

Ghana is one of the first Sub-Saharan countries to deepen its financial market. The Ghana's stock exchange was established in July 1989 as a private company limited by guarantee under Ghana's companies' code, 1963. The Exchange however, changed its status to a public company limited by guarantee in April 1994. Trading on the floor of the Exchange commenced in November 1990.

Despite the introduction of Ghana's Stock Exchange in 1990, it was until 1997 that Ghana was able to broaden its financial markets through the introduction of the derivative products

such as swaps. Companies such as Ashanti Goldfields used options, futures and FRA to hedge against price fluctuations in gold on the commodity market.

According to a paper Francis Kwaku Eguwritten by Ashanti Gold sold 4.1m ounces forward at an average of $432 an ounce and also sold call options covering 1.1m ounces to expire over 5 years at an average strike price of $459. Total hedging position of 5.4 represented less than 2.5 of its gold reserve. (Glen Arnold, 1998) The situation is differently today with more companies involved in the derivative market.

According to the bank of Ghana report (Bank of Ghana WP-07/2007) the exchange derivative market has improved the capital structure and profit making ability of commercial banks, as well as corporate bodies in Ghana.

1.5. The design of international and the Gambian foreign exchange market

The foreign exchange market turnover globally is on the rise. According the Bank for international settlements the growth in foreign exchange turnover has doubled over last ten years of review. Similarly,the Gambian foreign exchange market is no exception this growth in foreign exchange volumes thanks to its flexible foreign exchange regime and increased opening of its financial market to the international world since 1984.

1.5.1 The international FX market

The Bank for international settlement (BIS) coordinates a global central bank survey every three years. The study is designed to produce comprehensive and internationally consistent information on the size and structure of the foreign exchange (FX) and over the counter (OTC) derivative market. This will increase market transparency and therefore help monetary authorities and market participants' to better monitor patterns of activity and exposures in the global financial system.

Since 2007, the FX market against all oaths continues to grow from strength to strength, despite the financial crisis. According to the 2010 report by BIS, The Fx turn over for the entire world was $4 trillion, which is 20 percent increment relative to 2007.However,the growth in the FX market is not commensurable to the growth witnessed from 2004 to 2007. The main deceleration could be attributed to the financial crisis that affected crucial market dealers in the FX market.

Notwithstanding, the growth in the FX market to 20 percent in 2010 is a clear testimony of the market resilience despite the financial crisis. The growth in 2010 was driven by a shut up in spot transaction to 48 per cent relative 2007, which is 37 percent of the FX turnover. Another variable responsible for this growth is the increase level of other financial institutions counterparties. In 2010, there was considerable level of participation from non reporting banks in the market, such as central banks, hedge funds, pension fund s and insurance companies.

The FX market has become increasingly more global were cross boarder transactions comprising 65 percent of the market turnover, whereas local transaction accounted for the 35 per cent., the lowest share ever.

Data for turnover by counterparty revealed that growth in the turnover of the foreign exchange could be associated to the increase in the activity of other financial institutions such as non reporting banks, insurance companies pension funds etc. According to the BIS, this category of institutions grew up by 42 per cent from 2007 to 2010.The level of foreign exchange transaction of non financial customers decline to 10 per cent. This category includes governments, and corporate. Below is a tabular presentation of the foreign exchange turnover by counterparty.

Global foreign exchange market turnover by counterparty[1]

Daily averages in April, in billions of US dollars and per cent

Instrument/counterparty/ maturity	1998		2001		2004		2007		2010	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
TOTAL	1,527	100	1,239	64	1,934	100	3,324	100	3,981	100
with reporting dealers	961	63	719	37	1,018	53	1,392	42	1,548	39
with other financial institutions	299	20	346	18	634	33	1,339	40	1,900	48
with non-financial customers	266	17	174	9	276	14	593	18	533	13
Local	698	46	525	42	743	38	1,274	38	1,395	35
Cross-border	828	54	713	58	1,185	61	2,051	62	2,586	65

[1] Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). Due to incomplete reporting, components do not always sum to totals.

Table B.2

Source: BIS

The currency composition of the foreign exchange has change at a moderate pace. From 2007 to 2010.The USD has fallen from the 90 per cent market turnover to 84.1 percent. Notwithstanding, it is the most traded currency in the foreign exchange market. Next is the

EUR 39.1 percent, followed by the JPY, GBP, at 19, and 12.9 percent respectively**.** Below is a tabular representation of the currency composition of the major traded currencies in the foreign exchange market

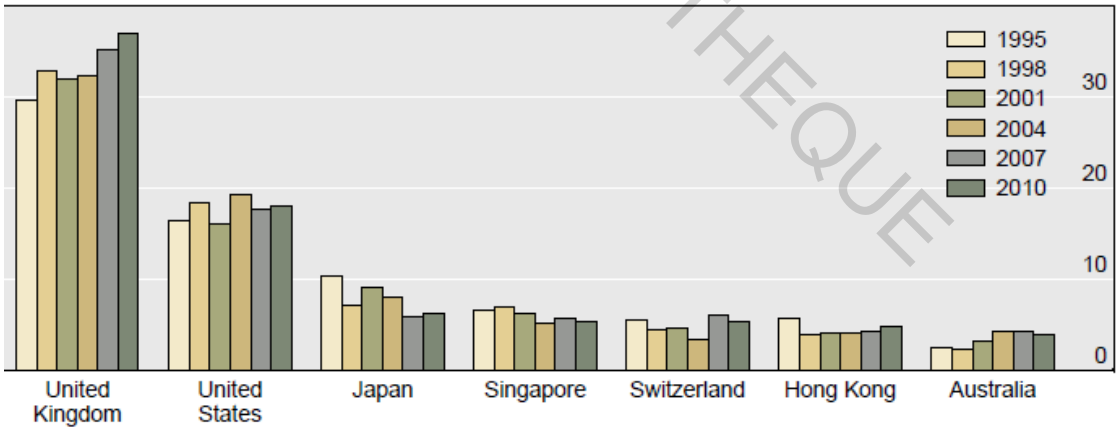
The geographical distribution of the foreign exchange has increasingly become more global in 2010 relative to 2007. The foreign exchange cross border transaction accounted for 65 percent of the total turnover, whereas local trade drops down to 35 percent. According to BIS banks in UK accounted for 37 per cent of the total volume of foreign exchange trade, the US accounting for 18 per cent, Japan 6 per cent, Singapore 5 per cent, Hong Kong 5 per cent, Switzerland 5 per cent, and Australia 4 per cent.

In dollars term the greatest increase is in United Kingdom registering a trading activity of $370 billion, United States $ 159 billion, Japan $62 billion and Hong Kong $57 billion. The foreign market is concentrated in Western Europe, which accounts for 55 per cent of global turn over, America and Asia accounts for 20 per cent global turnover.

Below is a tabular presentation of the global turnover by geographical distribution

Geographical distribution of foreign exchange market turnover

Daily averages in April, in per cent



[1] Adjusted for local double-counting, ie "net-gross" basis. Graph B.7

Source: BIS

1.5.2. Overview of The Gambian Economy

The Gambia among the smallest West African country gained its independence on 18 February 1965 .According to World Bank data report, September 2012, the Gambia's population was 1,767,103 million with an annual growth of 2.23 percent. The Gambia is an agricultural based economy accounting for 70 percent of the economy. According to the IMF report in 2013, the Gambian economy remains resilient since 2008 despite the financial crisis faced by developed economies. The remarkable performance of the economy could be associated to the sound economic policies implemented by the CBG

The Gambian Fx-market has known a significant improvement since the adoption of the floating exchange rate regime in 1986.The number of markets participants are growing in number and consequently the volumes of trade are swelling up year after year. The major traded currencies in the inter-bank market are the USD, EUR, GBP and the CHF. However there are also some currencies that are also attracting attention such as DKK, CFA, and NKK

The central bank of the Gambia is mandated to maintained price stability and support economic growth without any prejudice to economic stability under the banking Act 2005.Since then the CBG has been implementing sound economic policies as stated by IMF. In addition the CBG has been mandated by the FIA Act 2003 and the CBG Act 2006 to regulate financial institution in order to underpin sound financial stability.

The change in legislation has thus helped deepen the financial sector in the Gambia. The economy has witnessed an exponential growth in financial institutions such as commercial banks, bureaus, microfinance and insurance companies. And under the Banking Act 2005, these institutions are regulated and licensed by the CBG.

The CBG is also mandated under the banking act 2005 to manage the national foreign reserves. Currently, the Gambia has a five month import cover. Occasionally; the CBG intervenes in the inter-bank market through the buying and selling of foreign currencies. The intervention is mostly driven by monetary or prudential purposes.

Banking in the Gambia has been over 100 years old. But the growth in this sector has not been remarkable until in the 2007.Currently the Gambia has 14 Banks, among these banks there is 1 Islamic bank and 13 commercial banks. Due to stiff market competition and increased demand in financial products, banks have outlets totaling to 74 branches, 22 outside greater Banjul area. According to the MPC meeting report, January (2013), assets of the banking industry increased to D20.6 billion from D18.6 billion in 2011. Loans and advances, accounting for 30.1 percent of total assets, decreased to D5.4 billion, or 1.8percent from 2011. The quality of assets improved. The non-performing loan ratio declined to 11.6 percent of gross loans relative to 12.6 percent in 2011.Deposit liabilities rose to D13.08 billion, or 2.1 percent over 2011. The loan to deposit ratio decreased to 41.6 percent against the 44.1 percent in 2011.

In the early 2003 there was only seven licensed bureau de change in the Gambia. The bureaus de change is regulated by the CBG under the banking Act 2005. The level of market liberalization coupled with the improved level of inflows in the form of remittances has served as an incentive for the proliferation of bureau de change in the Gambia.

As at end 2010, there were 49 registered bureaus in the Greater Banjul Area with 104 outlets. End 2012, the total number of registered bureaus increased to 59 that is a 20 percent increased.

Market share for the bureaus as at end 2010 was only 5 percent, however, as at end 2012 the market share for bureaus in the inter-bank market increased to 10%. These could be largely associated to not only increase number of registered bureaus in the Greater Banjul Area but also to the improved level of outlets in the hinterland of the country.

Apart from the two convictions advanced before, the increase in the market share could be as a result of the fact of accessibility. In banks, customers are normally fatigue by the long queue whereas the bureaus are not faced with such congestions, thus becoming the alternative for remittances from immigrants abroad.

Money transfer agents have been very important channel for remiting remmitances form abroad. The growth of this financial channel become remarkable in 2004. Curently we have five authorised money transfer agents in the Gambia.: Western Union,RIA money transfers,moneygramme,money express,and Bayba money transfer. But the most used money transfer agent is wester unin and money gramme.

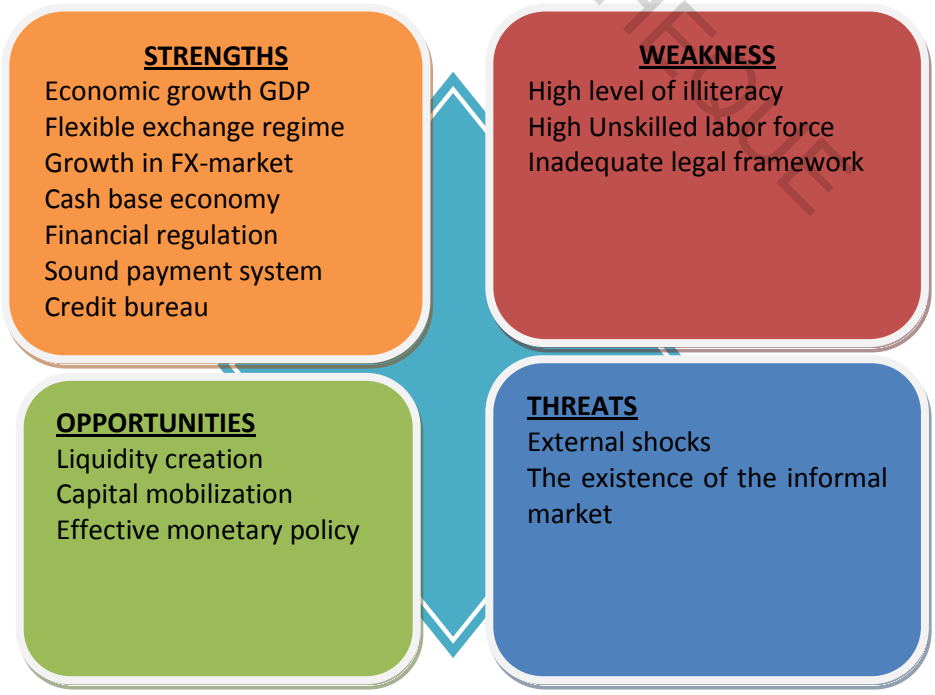
Commoity traders excluding banks are among the most ative market participants in the FX-market.The volumes of currency shipment or letters of credit can be use as a bench mark for measuring level of importers activity in the inter-bank market.

1.5.3 Re-quesite conditions for the establishment of the derivative market

The idea of establishing a currency derivative market without the re-quisite market condition would be a white elephant project.

A SWOT analysis of the Gambian economy would be a stepping stone in the evaluation process of the economy

SWOT ANALYSIS OF THE GAMBIAN ECONOMY

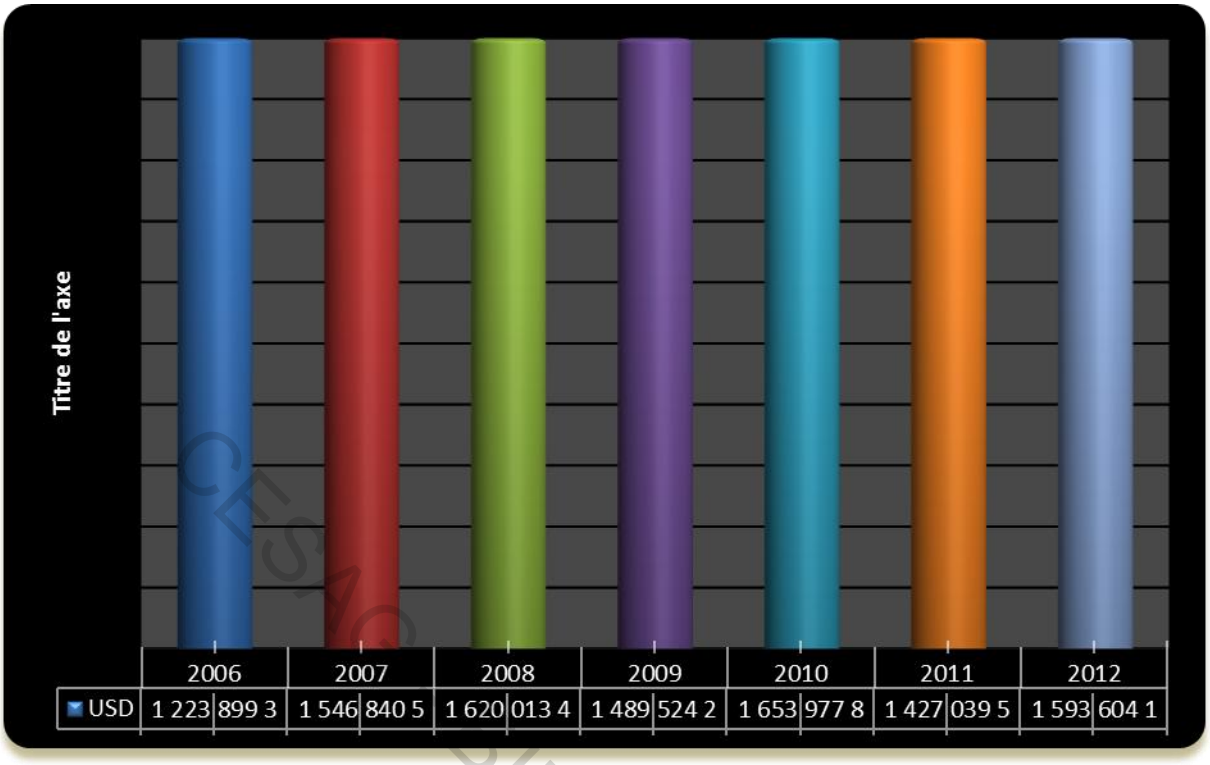


The requisite condition for the establishment of foreign exchange derivative are , a liberalized exchange regime, an improved level of trade volumes, high level of currency volatility legal framework and a functioning inter-bank market.

The trade volume is the daily inter-bank FX-market transaction. The trade volumes of the Gambian inter-bank foreign exchange market' has markedly increased since 2003. As at end 2003, the total yearly FX- market trade volumes amounted to $426, 171,043 million. But by 2006, yearly volumes in the inter –bank market amounted to $1, 223, 899,354 billion, for the first time .From 2006 to 2007, trade volumes increased by 4 percent, however dropped by 8 percent in 2007 to 2008.In contrast to 2007 and 2008, trade volumes in 2010 to 2011 declined by 11 percent, notwithstanding by end 2012, trade volumes expanded by 14 percent relative to the previous year.

The foreign exchange inflow is mostly originates from remittances and export trade on agricultural products. Groundnut trade provides a substantial amount of FX inflows in the economy. The proliferations of the banking industry couple with improved level of foreign direct Investments, among other factors are the main force behind the exponential growth of trade volumes. Below is a tabular presentation of the yearly trade volumes from 2006 to 2010 in the inter-bank market.

Figure 1: Trade Volumes in Billions of Dollars

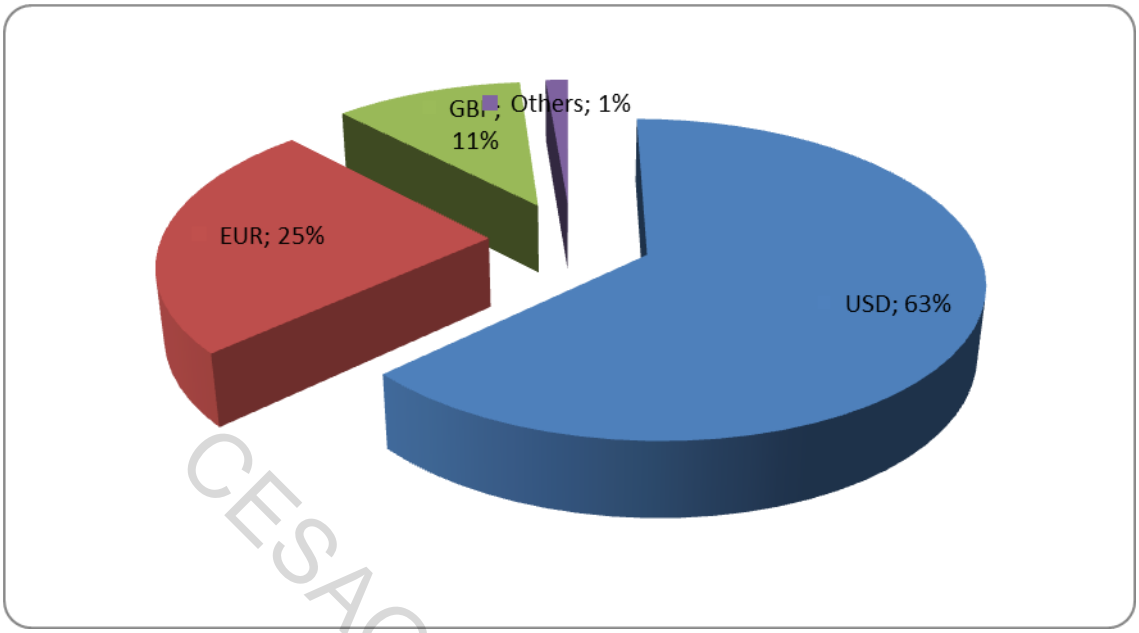


The inter bank market is composed of five major traded currencies that is USD, EUR, GBP, CHF and the CFA. The most traded currency in the inter-bank market is the USD comprising of 65 percent of the market share .Next is the EUR which constitutes 19 percent of the market share, followed by the GBP accounting for 11 percent of the market shares. Other currencies cumulated accounts for the remaining 5 percent of the market shares.

The USD is the dominant currency in the inter-bank market. Most of the importers and exporters accounts are denominated in USD. The GPB used to be the second major traded currency after the USD; however since the introduction of the EUR in 2001, the GBP has gradually lost its market share to the EUR. Currently the EUR is the second most traded currency in the inter-bank market.

Below is a graphical presentation of the market share of the most traded currencies in the inter-bank market of the Gambia as at end 2012.

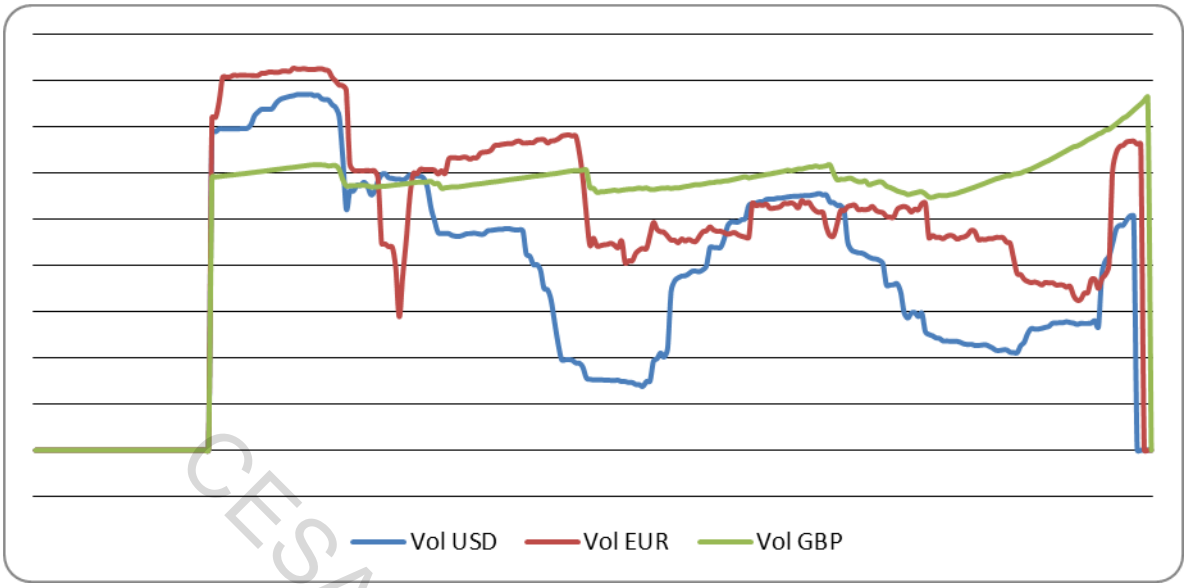
Figure 2 : Currency Market Shares



The volatility in exchange rate refers to it's statically means of dispersion of return or change. Over the years the major traded currencies in the inter-bank market (USD, EUR, &GBP) have been very volatile.

According to data analyses results of the rate of volatility of the major traded currencies in the inter-bank market. The USD is the most volatile currency registering an annual volatility of 10 percent per annum. The euro also registered an annual volatility of 5 percent per annum and the GBP registering 3 per cent per annum

Figure 3 Currency Volatility



As it would be considered, the volatility of the spot serves the building block for the establishment of a derivative market. The rate at which the two currencies are volatile have a considerable impact on domestic prices of food stuff and building material. In addition, a high volatile exchange would even blur monetary policy transmission mechanism and therefore cause systemic market problems such as pricing problem.

The volatility of the major traded currencies could be attributed to external shocks .The current financial crisis in the Euro area coupled with increase quantitative easing from the FED and Bank of England has made markets unpredictable and thus rendering currencies more volatile.

1.5.4 FX -Market Regulatory Framework

The Banking Act 2005 has tackled the regulation framework of the FX-Market, but not adequately. It is only mentioning the banks mandate to regulate FX- market; however, guidelines on how FX- market activities should be conducted are not clearly spelt.

Notwithstanding, the only existing regulatory frame work in the FX is the prudential guidelines for the operation of foreign exchange bureau. The guidelines outlined the pre-requisite conditions for the operation of foreign exchange bureaus.

As a matter of fact the bureaus de change accounts for only 4 per cent of foreign exchange trade volumes in 2010 However in the 2011, the Bureaus de change market share increased to 10 per cent owing to exponential expansion of the bureaus in the Greater Banjul Area and the hinterlands.

Commercial banks are the largest market players in the FX market composing 9o percent of total turnover for the foreign exchange market. The automatic acquisition of banks license to do foreign exchange transaction once authorized to conduct banking business is perhaps one of the must daunting obstacle to the establishment of foreign exchange guidelines for the FX-market in the banking sector.

The establishment of the foreign exchange frame work cannot be over sighted, if the Gambia is to consider deepening its financial sector. The deepening of the financial sector without proper rule set in place will consequently led to huge market instability. An effective monetary transmission mechanism for monetary policy purposes needs not only deep financial market but also market stability.

The establishment of foreign exchange derivative market would be feudal if their no rules governing the Fx- Market. The building block of foreign derivative market is the Spot market In view of the fact that the current guidelines do not cover banks and the operation of foreign exchange transaction in the international market, therefore am proposing a regulatory framework for the foreign exchange Market in the Gambia.

CHAPTER TWO:
ORGANIZATION OF THE CURRENCY DERIVATIVE MARKET OF THE GAMBIA

In the Gambia there is no stock market currently operating, however, the need to establish an organized derivative market instead of an Over the counter cannot be over emphasized.

Firstly, in the Gambia the OTC market is already existent even if it is not legally authorized by regulatory authorities. Commercial banks like Standard Chartered bank, Trust bank and Banque Sahelo-Saharienne pour l'Investissement (BSIC) have been using derivative instruments such as forward contracts currency options to hedge against currency risk.

Secondly, the establishment of an organized currency derivative market would serve as a benchmark for the above mentioned market players to follow when pricing and designing their contract.

Thirdly, the creation of and organized derivative market would make regulation easier and underpinned speculative transactions in the market which sometimes cause hedge financial instability in the market.

2.1. The premises of Gambia Exchange derivative Market (GXDM) building

The Gambia Exchanged derivative market building shall be housed by the CBG building complex. The CBG Complex is located at ½ Ecowas Avenue Banjul; The Gambia .The annexing GXDM building to the CBG would enhance resource mobilization through the use of already established resources. This will evidently reduce unnecessary coast in the creation of the derivative market.

2.1.1 Clearing House

The clearing house acts as an intermediary body between transactions and takes initial margins from both sides of the trade to act as a guarantor. The clearing house for the proposed derivative shall be hosted by CBG. The CBG has a long history as a refereeing institution in the FX inter-bank market. The CBG served as the clearing house for all inter-bank transactions before the introduction of the new payment system and the real times gross settlement systems (RTGS) in 2011, and continue to host the credit reference bureau of banks.

2.1.1.1. Structure of the Clearing House

The derivatives clearing house shall restrict direct participation in the clearing process to the most creditworthy subset of the exchange's members; these are those clearing members that have a principal relationship with the clearing house in its capacity as central counterparty for all contracts submitted and accepted for clearing. Market participants that are not clearing members must establish an account relationship directly or through another party (a non-clearing broker) with a clearing member to effect settlement. Generally, there is no contractual relationship between the derivatives clearing house and these non-clearing member market participants

The clearing house shall constitute three members, that is a General Clearing member (GCM), Direct Clearing Member (DCM) and a Non Clearing member (NCM). GCM may settle its own transactions, those of its customers, as well as those of market participants which do not hold a clearing license (Non Clearing Members–NCM). DCM is entitled to clear only its own transactions, those of its customers, and those of its corporate affiliates which do not hold a clearing license.

2.1.1.2. Clearing

Trade management give up and take ups functionality shall allow members to transfer trade to other members. A NCM can make a give up request and a DCM or GCM can accept the take up of transfer of trade Position management is the sum of all long trade netted against the short trades.

2.1.1.3. Margins

In order to protect themselves against the risk emerging from the default of a clearing member, GXDM shall clearing houses request initial margin from a clearing member upon the creation of a position.

2.1.2. Collateral management

The GXDM shall request members to deposit collaterals either in the form of securities or cash as they open a position in the market**.** The clearing house has the mandate to demand for additional collateral from clearing members. Below is the table presentation of proposed acceptable collaterals in the GXDM.

Table 6 Acceptable Collateral in GXDM

Collateral	Currency	Admission criteria	Sub group	Haircut
Treasury bills	GMD, USD, EUR and GBP	T-bills life span of one year	Government T-bills	3.6%
Bonds	GMD, USD, EUR and GBP	A life span of less then 3 years	Government bonds	4.8%
Cash	USD, EUR, GBP, GMD currencies are accepted			

2.1.2 Capital requirements

The clearing house of GXDM will set capital requirements for clearing members. This capital requirement shall be reviewed periodically so as to ascertain the assets condition to cover the calculated risk. Below is a tabular presentation of the amount for capital requirement for members.

Table 7 Capital Requirement

	General Clearing Members capital requirement in GMD	Direct clearing members capital requirement GMD
GXDM Clearing License	250 million	25 million

2.1.3. Settlement

Members of the GXDM will maintain several accounts for settlement of derivative contracts, which include bank accounts for cash settlements and securities accounts(T-bills, Bonds).Clearing members have to open one cash account which is the settlement account with designated banks so as to pay variation margins, premiums and taxes.

2.2 Membership

Members shall be the interface between the organized market and the users. All transactions on the GXDM platform shall be executed between registered members, who are found to be authorized license dealers who have the meet the requisite conditions for direct participation in the GXDM Non member participants have to participate as clients of members

The capital requirement is an important criteria of selection of a membership as it limits the market participants to only creditworthy customers. Commercial bank, investment banks, importers and exporters, brokers shall be the principal members of the market and the capital requirement for membership is D250, 000. Members shall have a high standard of integrity in all their operations in addition to complying with stringent capital adequacy requirements, and have appropriate staff and infrastructure. Applications for membership, and the applicants themselves, will be evaluated by strict standards to maintain public confidence in the GXDM.

2.3 Operational Strategy of the GXDM

The operational strategy is an essential piece in the establishment of GXMD. It shall envisage a market were operations are determined by the natural forces of demand and supply. In addition it will give a detail explanation on how pricing is done and all the procedural needs of clearing. Another important variable is the operational calendar; the operational calendar would be design in a bid to help smoothening market operation as well as enhanced good and efficient service delivery to all market participants.

2.3.1 Pricing foreign currencies

The price of an underlying currency is determined by the forces of market demand and supply. This means all prices are sent to the clearing house every day, at the end of the day the weighted average of the underlying foreign currency is fixed and published for pricing the following day. Every day the CBG will publish its fixing prices for the underlying foreign currencies against the domestic currency for market consumption.

2.3.2 Operational calendar of futures and option contracts

The operational calendar for the futures and option contracts is important in order to standardize the market. In this calendar year 2014 future and options contracts have the same contract beginning days and expiry days. The expiry months identified for the future and options contracts are March, June, September and December.

The expiration of a future or option contract is two days before the third Wednesday of the expiry month. This is usually on a Monday. On the other hand the beginning or opening of

an option or future contract is the third Wednesday of every expiry month. Below is the tabular presentation of the beginning and expiry date's f futures and option contracts in the GXDM.

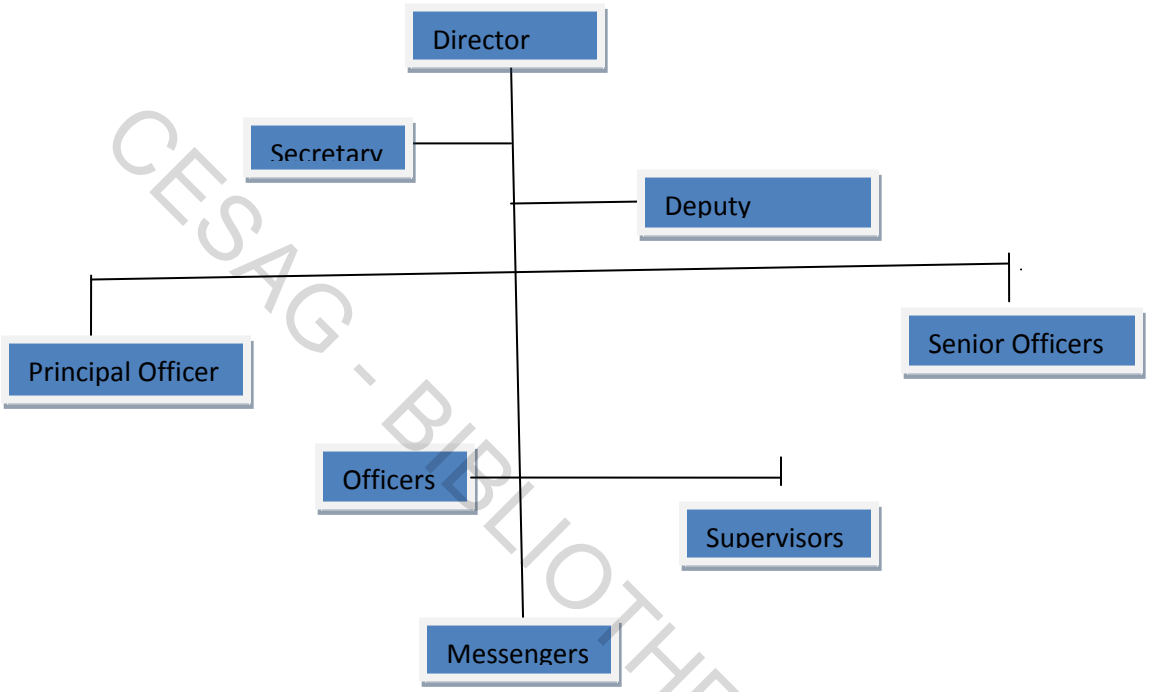
Table 8 : Calendar year for futures and options contract for GXMD

	Calendar year for Futures & options											
	2014			2015			2016			2017		
	Monday	Tuesday	Wednesday	Monday	Tuesday	Wedneday	Monday	Tuesday	Wedneday	Monday	Tuesday	Wedneday
Jan												
Feb												
March	17		19	16		18	21		23	13		15
April												
May												
June	16		18	15		17	20		22	19		21
July												
Aug												
Sept	15		17	14		16	19		21	18		20
Oct												
Nov												
Dec	15		17	21		23	26		28	18		19

Source:Author

2.4. Human resource

Since the GXDM is annexed to the CBG, the recruitment policy and strategy shall be done by the CBG. We are going to use the organnigram of the CBG. Below is a scheme of the organnigramm of the GXDM Department.



In the establishment of the above organogramme is under the assumption that GXDM department is a subset of the CBG. Therefore all the other departments to name a few IT departments, Finance department Human resource department shall help in the day to day running of the GXDM. Thus it is not necessary to establish these departments when there are already well functioning departments up and running.

The success of GXDM sis highly dependant on the caliber and status core of the employees, thus the outlined intention is that all principal senior officers shall be Masters degree holder, officers and supervisors will be bachelor degree plus additional professional qualification. Below is the proposed recruitment plan for the GXDM department.

Table 9 Human resource

TITLE	QUALIFICATION	TOTAL NUMBER
DIRECTOR	Master degree in banking, finance, or economics, 10 years experience working in a stock exchange market	1
DEPUTY DIRECTOR	Master degree in banking, finance, economics, 7 years experience working in an exchange market	1
PRINCIPAL OFFICERS	Master degree in financial investment, economics, banking and finance, 5 years experience as an investor	2
SENIOR OFFICERS	Master degree in finance, economics and 3 years work experience in a similar position	2
OFFICERS	Bachelor degree in economics , finance and an additional professional qualification with 2 years of work experience	4
SUPERVISORS	Bachelor degree in finance, economist or banking and additional professional qualification with 1 year work experience	3
SECRETARIES	Intermediate certificate in computer training, with good skill of MS-word, Excel, etc	1
MESSENGERS	WAEC certificate	1

2.5. Products

The currency derivative products to be introduced in the GXDM is future contract and the option contracts

2.5.1 Future contracts

A currency futures contract is a contract that allows market participants to trade the underlying exchange rate for a period of time in the future. Currency futures are agreements between two counterparties where one counterparty buys (longs) the underlying exchange rate and the other sells (shorts) the underlying exchange rate on a specified future date.

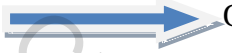
2.5.1.1 Features of a future contract

The future contract to be introduced in the GXDM market will have the following characteristics as would be specified.

2.5.1.2 Underlying currencies

The underlying currencies that would be eligible for a future contract in the GXDM is USD, EUR and GBP. The contracts will be quoted as follows

1USD  GMD

1EUR  GMD

1GBP  GMD

2.5.1.3 Minimum Contract SIZE

The contract size of the future contract shall be 1000 of the underlying foreign currency of the contract.

2.5.1.4 Expiry Months and dates

The expiry date for the future contract is in every three months. It is March, July, September and December. All currency futures contracts expire two business days prior to the third Wednesday of the expiry month or, if that day is not a business day, then the previous business day.

2.5.1.5 Settlement

Currency future contracts are cash settled in Dalasi. No physical delivery will ever take place.

Table 10 Future Contract Specification

NAME	GXDM-GMD: currency derivative
CONTRACT	USD/ GMD currency future contract
UNDERLYING INSTRUMENT	Rate of exchange between the USD and GMD
CODES	USDGMD
CONTRACT MONTHS	Mar, June, Sept, Dec
LISTING PROGRAMME	Near, middle and far contracts special on demand
EXPIRY DATES & TIMES	**At 10H00 New York time (i.e. 16H00 in SA winter and 17H00 in SA summer) two business days prior to the 3rd Wednesday of the expiry month (or the previous business day if close-out day is a public holiday**
EXPIRATION VALUATION METHOD	**At 10H00 New York time (i.e. 16H00 in SA winter and 17H00 in SA summer) two business days prior to the 3rd Wednesday of the expiry month (or the previous business day if close-out day is a public holiday)**
CONTRACT SIZE	Nominal value $1000
QUOTATIONS	One USD per GMD
MINIMUM PRICE MOVEMENTS	0.0001
SETTLEMENTS	Cash
INITIAL MARGIN REQUIREMENT	10 percent of the notional amount
MARK TO MARKET	**The arithmetic average of each mid price on the underlying spot price taken for a 5 minute period between 16h55 and 17h00 daily.** Thereafter the average is crossed with the average USD/ZAR spot price plus the average forward points at 17h00 to determine the closing value.
EXCHNAGE FEES	To be determined by the sliding scale
MARKET TIMES	9 AM to PM

2.5.1.6 Fees Cost

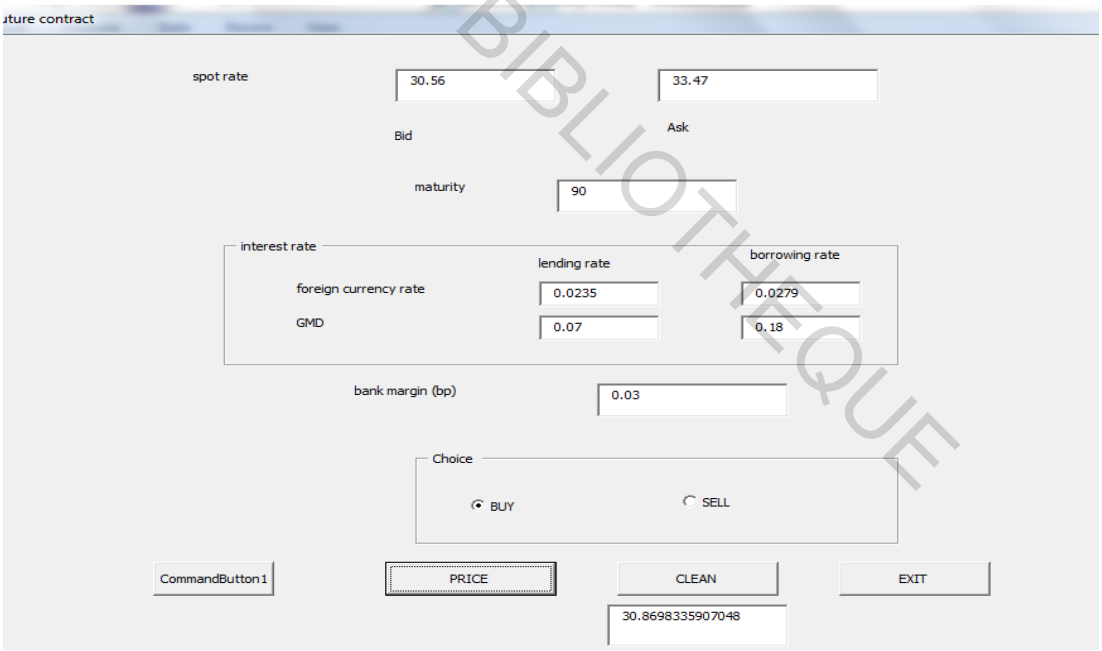
The exchange fees are the fees that members pay to the clearing house. The exchange fees are not fixed but in a sliding scale .The main design for this is to entice market participants to engage in large contracts.

Table 11. Fees cost clearing

Sliding scale-number of contracts	Trading fee per contract
1-1000	D 5.00
1001-5000	D4.90
5001-7500	D 4.80
7501-10000	D4.70
10001-15000	D4.60
15000 and more	D4.50

2.5.1.7 The pricing model

This pricing model is developed for the GXDM to price its future contracts. Market participants may use other pricing model for the future contract. But the one developed below will serve as a token for those who could be interested in market but have not yet paid for a price.



2.5.2. Option contract

Currency Options are derivative contracts that grant the purchaser the right but not the obligation to trade a Currency Futures contract at a predetermined date in the future (closeout) at a prearranged price (strike), regardless of where the underlying market is

trading. The Currency Options traded on the currency derivatives trading platform are based on the underlying Currency Future contracts on a one-to-one basis. This implies that Option holders have the right but not the obligation to enter into a Currency Futures contract at the strike price chosen in advance. Currency Option premiums fluctuate with movements in the underlying spot and futures exchange rates.

2.5.2.1 Features of the option contract

The features of an option contract are the underlying currencies, expiration of the contract and preferred settlement method –i.e. either cash or physical delivery.

2.5.2.2 Underlying instrument

The underlying currencies eligible for trade in the GXDM is USD, EUR and GBP. These currencies shall be quoted in the market the same as the quotation in the spot market.

1 USD = GMD

1 EUR = GMD

1 GBP = GMD

2.5.2.3 Expiry Date

The expiry month for an option contract is the same as that of a future contract; March, June, September, and December. All currency derivative contracts expire two business days prior to the third Wednesday of the expiry month or, if that day is not a business day, then the previous business day.

2.5.2.4 Exercise strike price

This is the pre-determined price at which you buy or sell the underlying currency if the Option is exercised. The strike price is expressed in Dalasi (GMD) per one unit of foreign currency. To improve liquidity GXDM shall only allow strike prices with 3 bututs intervals. Examples would include D 30.20 per Dollar or D 30.23 per Dollar.

2.5.2.5 Premium

The premium of an option which is paid by the buyer to acquire the right to buy and the obligation shall be denominated in GMD. The modified Black and Scholes model will be used to calculate the price of an option.

2.5.2.6 Minimum ticks

The minimum tick allow in a currency option contract is 0.001 bututs.

2.5.2.7 Minimum contract size

The minimum contract size of a currency option contract shall be 1000 of the underlying foreign currency to be traded.

2.5.2.8 Settlement

All option contract shall settlement shall be done cash. All options shall be automatically exercises if at expiration day they have a tick of D0.01.or more" in the money". Example if you buy a call option USD/GMD 30.3000 and at close the option is at 30.3001 then your option is automatically exercised at 30.3000.

The cost fees and initial is the same for both futures and options contracts.

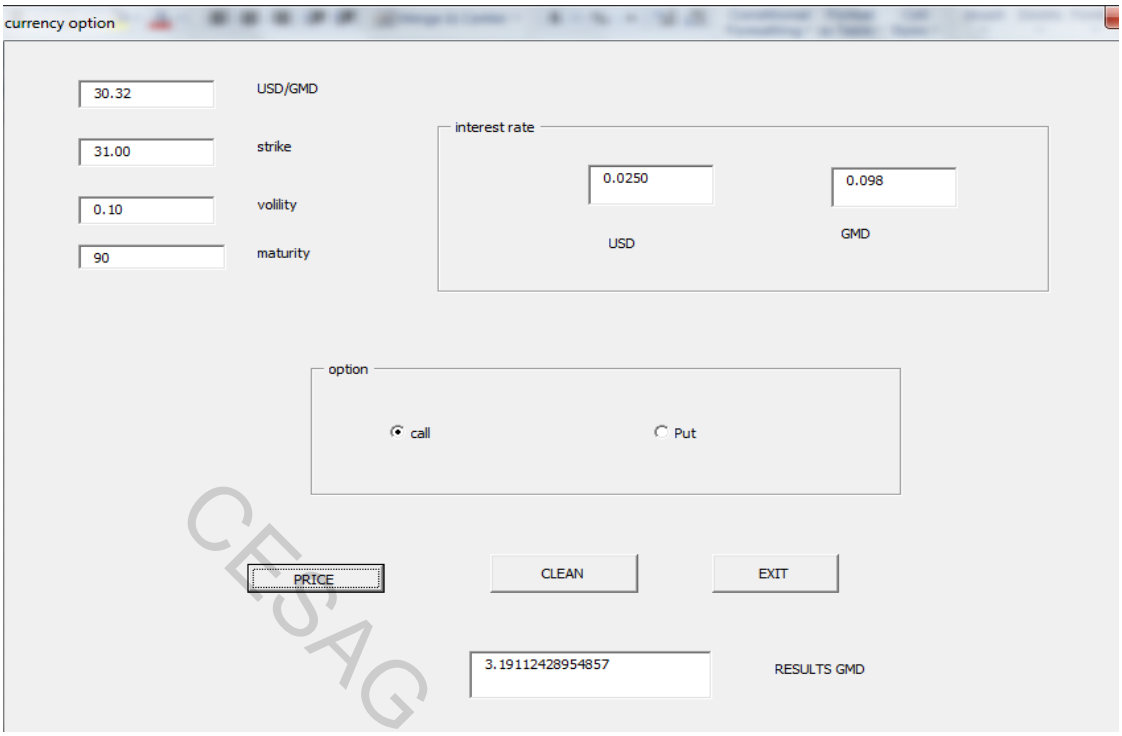
Table 12 Option Contract Sepcification

NAME	GXDM-GMD: currency derivative
CONTRACT	foreign currency/GMD option contract e.g $/GMD
UNDERLYING INSTRUMENTS	Foreign currency / GMD future contract
CODES	14 Dec USDGMD
CONTRACT MONTHS	Standardized, March, June, Sept and Dec
LISTING PROGRAMME	Near, Middle and far contracts
EXPIRY DATES & TIMES	At 10h New York and 17h Gambia time, two business day prior to the third Wednesday of the expiry month.
EXPIRATION VALUATION METHOD	Arithmetic average taken by the underlying spot every 1 minute for 30 minutes. ending at 10h New York time and 17h Gambian time
TYPES	Calls and Puts
CONTRACT SIZE	Nominal value of 1000 of the underling foreign currency
QUOTATION	Naked options
STRIKE PRICE	Expressed in GMD per unit of foreign currency
STRIKE PRICE INTERVAL	Strike price interval D0.01
OPTION PREMUIM	As determined by the Black and Sholes option model
PREMUIM QUOTATION	Option premiums quote in GMD per contract
MINIMUM PRICE MOVEMENT	Minimum price movement 0.001
EXERCISE STYLE	European style option
EXERCISE SETTLEMENT	Cash settled in GMD
INITIAL MARGIN REQUIREMENT	As determined by the portfolio methodology
MARK TO MARKET	Modified Black &Sholes formula
EXCHANGE FEES	Sliding scale the same for the futures
MARKET TIMES	900h-1700h
VOLATILITY SKEW	To be determined by using super derivative data
AUTOMATIC EXERCISE	Only " in the money" options

2.5.2.9 Option pricing model

The proposed option pricing using the modified Black & Sholes model will market participant to determined the premium to pay (buyer of an option) and the premium to receive(seller of an option) at the beginning of the contract. Below is a tabular presentation of the model .

Black & Sholes option pricing model



Source : Author

2.5.3 Regulatory Framework for GXDM

.

"Bank" means the Central Bank of the Gambia

"Authorized Dealers" A licensed person under this regulation

"Foreign exchange derivative contract means a financial transaction or an arrangement in whatever form and by whatever named called, whose value s derived from price movement in one or more underlying assets, and includes:

A transaction which involves at least one foreign currency

A forward contract, but does not include foreign exchange transaction for cash

Only person duly authorized by the Bank can enter into Foreign exchange derivative contract.

Except in such circumstance as may be prescribe no person other then authorized dealer should enter into a currency Foreign exchange contract.

Saved as otherwise provided no person in the Gambia will enter in to foreign exchange derivative contract without prior authorization of the Bank

Permission to a person to enter into a foreign exchange derivative contract in the Gambia

A person in the Gambia will enter into foreign exchange derivative contract in accordance to the regulations provided ……to hedge an exposure to risk in respect to transactions permissible under the prudential guidelines of CBG Financial supervision Department.

Permission to a person resident out side the Gambia to enter into a foreign exchange derivative contract.

A person resident out side the Gambia is authorized to enter into a foreign exchange contract with pure intention of hedging an exposure to risk in respect to transactions permissible in the prudential guidelines of FSD.

Remittances related to foreign exchange derivatives contracts in the Gambia, in respect of a transaction under taken in conformity to these rules namely:

Option premium payable to a person resident in the Gambia to a person resident out side the Gambia

remittances related to foreign exchange derivative authorized by the Bank

The derivative contracts permitted under this regulation to be used for hedging purpose are Futures contracts and Options contracts

2.5.4 Contract Exposure

Any authorized dealers who wished to enter in to FX future contract have to request evidence of trade backed documents so that the existence of the underlying exposure can be clearly established. Full description of the contract should be indicated on the document to be submitted to the Bank. In instances were the original document cannot be submitted, a copy of the document can be submitted with the signature of the authorized dealer. The customer can be given 20 working days to fill documents evidencing his contract. In case he did not file in this document after 20 working days the FX future contract should be cancelled and any exchange gains arising from this contract should not be remitted to the

customer. The trade back documents that can be submitted for authentification and verification purpose are:

Pro forma invoice (visible trade)

Senior management statement on provisional eligible transaction

Demand note invoice as appropriate (invisible Trade)

Certificate of capital importation as may be appropriate

Senior management statement on the provisional eligible transaction

Future contract

Participants

Market-markers- commercial banks

Users- person resident in the Gambia

Purpose

To hedge exchange rate risk in respect foreign exchange risk arising from the sale or purchased

To hedge exchange rate risk in respect of the market value of overseas investment

To hedge exchange risk of transaction denominated in foreign currency, but settled in GMD, this includes hedging of the economic exposure of importers and exporters.

Future contracts covering this transaction should be settled in cash on maturity

Contracts once cancelled are not eligible for rebooking

In the event of change of custom duties, importers can either cancelled or rebook their future contract before maturity.

Operational Guidelines, Terms and Conditions.

Principles to be observed for a future contract

The maturity of the hedge should not exceed the maturity of the underlying transaction. In an event this happened, the risk management policy should be informed.

Where the exacts amount of the underlying transaction is not ascertainable, reasonable estimates could be accepted. But this would be review at the end of every three months.

All non GMD future contracts can be rebooked on cancellation

Issue of cancellation and rebooking may not be permitted on future contracts involving the GMD as one of the currencies. If these future contracts are cancelled, it most subjected to the following reasons

Switch is warranted based on market competition the client is offered a better rate by another dealer.

Cancellation and rebooking most be done simultaneously at maturity of the contract.

The facility of rebooking should not be permitted until the corporate provides exposure information subjected to appendix

In as much as there are guidelines for the future contract, it is incumbent to establish similar guidelines for the operations of options contract. This is expected to smoothen the operations of transactions in the market. Below are the specificities of entering into an option contract

2.5.5 Foreign Currency Option contracts

Participants

Market-markers – Commercial banks

Users- Person resident in the Gambia

Purpose

To hedge currency exposure in accordance to the prescribed guidelines in section I

To hedge the contingent foreign exchange exposure arising out of a tender bid in foreign exchange.

Operational guidelines, Terms and Conditions

Commercial banks can offer currency options to end users because the capital risk weighted average ratio of banks are well above 30 per cent

banks can offer plain vanilla options to customers

Customers can enter in to call and put contracts

All guidelines applicable to foreign exchange forwards are also applicable to the foreign currency options contracts.

Commercial banks having adequate internal control system, risk monitoring management system, a good hedging strategy, and mark to market mechanism would be permitted to conduct foreign currency option contracts. However they have to fulfill the following conditions below

Capital risk weighted average ratio of 10 percent in accordance with the Basel rules Should be making profit for two consecutive years

The net worth of the bank should be at least D500, 000,000.

A request for license can be filled to Bank for approval. The Bank has the discretion to approval or rejection of a demand by a market maker.

The bank can quote the option premium GMD or a percentage of the GMD/foreign currency

Options can be settled at maturity either by spot delivery or by net cash settlements. This can be left to the parties' agreement. In the case of unwinding of an option, there can be cash settlement only.

banks can hedge their delta by accessing the spot and forward market. They can hedge the theta, gamma in the inter bank market.

CHAPTER THREE
COST AND PROFITABILITY OF THE PROJECT

Given the gigantic nature of the project, it is essential to come up with a cost mechanism in order to give a fair value of the cost of the project. The basic fair value approach and appraisal techniques are used to arrive at the cost of financing the project and also outline the profitability of the project at the same time.

3.1. Cost of the project

The establishment of the organized derivative market is accompanied by a huge cost that needs to be financed by the Government, a corporation, shareholders etc.

In the case of the Gambia exchange derivative market (GXDM) the CBG shall finance all the initial coats of the project

The initial cost of the project could be regarded as the basic financing need required for the functioning of the project among others is, the tangible assets intangible assets such as soft ware materials and the working capital requirement. Below is a specification of the initial cost requirement of the project

Table 13 Initial Cost of the Project

Discription	Amount
Tangible Assets	
Dishtop computers	D112,000
Printing machine	D3,000
Office Desk	D12,000
Television set	D1,500
intangible Assets	
Soft wares	
Neuron platform	D536, 100
Product datafeed	D300, 000
working capital for a year	D1, 335,400
Total	D2, 300,000

The assumptions in the creation of this matrix are as follows:

The GXDM is going to be annexed to the CBG building therefore landing and building coasts is eventually scraped out. In addition soft wares for Real Time Gross Settlement System are already acquired by the CBG so initial cost of these soft wares does not also feature on the initial cost.

3.1.1 Software Equipment

Softwares to used in the project are product data feed and neuron technology these soft wares amounted to D836100 in cost

3.1.2. Materials and Office Equipment

Materials and office equipment identified for the smooth running of the project amounted to D128500.

3.1.3. Operating expenses Cost

The operating expenses are expenses acquired as a result of the day to day running of the business. The first year the operating expenses amounted to D1335400 and increased to D1715169 by the fifth year. Below is a tabular presentation of the estimated operating expenses of the project

Table 14 Operating Expenses Cost

Item for Working Capital Requirement	1st month	3rd months	1st Year	2nd Year	3rd Year	4th Years	5th years
salaries	100000	300000	1200000	1284000	1373880	1470052	1572955
vehicle running expenses	4000	12000	48000	48480	48965	49454	49949
Advertisement	2000	6000	24000	24240	24482	24727	24974
telephone expenses	800	2400	9600	9696	9793	9891	9990
repairing & maintenance	700	2100	8400	8484	8569	8655	8741
water and electricity	500	1500	6000	6060	6121	6182	6244
Bloomberg internet expenses	1000	3000	12000	12120	12241	12364	12487
depreciation	600	1800	7200	7272	7345	7418	7492
Rent	0	0	0	0	0	0	0
Stationary	500	1500	6000	6060	6121	6182	6244
Miscellaneous expenses	600	1800	7200	7272	7345	7418	7492
Total Payment	110700	332100	1328400	1413684	1504861	1602342	1706569

3.2. Benefit of the project

With the above swelling number of cost year by year it is important to outline the expected benefits of the project if it is established.

Firstly, the establishment of a currency derivative market will eventually enable market players such as banks, clients, investors, investment funds in the Gambia to hedge their underlying currency exposure.

Secondly, the establishment of this project as an organized market will serve as bench mark for market players who are using OTC derivative instruments.

Thirdly, the fact that it is an organized market, the current currency speculation shall be underpinned as government believes that speculation is the root cause of the spike in currency prices in the market and thus eventual weakening of the Dalasi.

Fourthly, the establishment of the project will be conducive for effective monetary policy, because the project is expected to stabilize the domestic market.

3.3. Profitability of the project and its risk mitigation

The project is expected to accrued profit from an increased in cash flows in the income statement. The increased in cash flows year after year is expected to be drawn from increase in market activity and the growth in contract sizes and number. However risk mitigating factors should also be considered such as liquidity and operational risk.

3.3.1 Income statement

The project is expected to derive income from clearing fees and licensing of members. The forecasted clearing fees is D1 and the number of contracts estimated for the first year is 1700000 contracts and the number of contracts grew to 2066731 in the fifth year.

The forecasted revenues for the first year (2014) amounted to D2300000.Revenuesin the second year increased by 10.21 percent relative to the previous year. By the third year revenues increased by 19.31, 27.95, and 42.01 percent in 2016, 2017 and 2018 respectively.

On the other hand expenses continued to grow moderately by 6.48, 13.27, 20.59, and 28.43 percent in 2015, 2016, 2017, and 2018 respectively.

Below is a tabular presentation of the forecasted income statement of the GXDM.

Table 15 Forecasted income statement for the Year-Ended 31 DEC (GMD)

	2014	2015	2016	2017	2018
Revenues					
Clearing Fees	1700000	1785000	1874250	1967963	2066361
Licensing Income	600000	750000	870000	975000	1200000
total revenues	2300000	2535000	2744250	2942963	3266361
operating expenses					
salaries	1200000	1284000	1373880	1470052	1572955
vehicle running expenses	48000	48480	48964.8	49454.45	49948.99
Advertisement	24000	24240	24482.4	24727.22	24974.5
telephone expenses	9600	9696	9792.96	9890.89	9989.798
repairing & maintenance	8400	8484	8568.84	8654.528	8741.074
water and electricity	6000	6060	6120.6	6181.806	6243.624
Bloomberg internet expenses	12000	12120	12241.2	12363.61	12487.25
depreciation	7200	7272	7344.72	7418.167	7492.349
Rent	0	0	0	0	0
Stationary	6000	6060	6120.6	6181.806	6243.624
soft &hard ware support charges	4000	4800	4700	4900	5000
outsourced service charges	3000	3500	3100	3200	3600
Miscellaneous expenses	7200	7272	7344.72	7418.167	7492.349
Total expenses	1335400	1421984	1512661	1610442	1715169
Net income	964600	1113016	1231589	1332520	1551192
profit Before tax	964600	1113016	1231589	1332520	1551192
tax 25%	241150	278254	307897.3	333130.1	387798
Net profit	723450	834762	923691.9	999390.2	1163394

3.3.2 Project Appraisal Tools

The project appraisal tools used in the project is Net present value (NPV) and the internal Rate of Return(IRR.). Given that each financial year the project made a profit, after

appraising the project we end up with a positive NPV and an IRR of 30.02%. Below is a table presentation of the project appraisal tools.

Table 16 Profitability of the Project

Projected Net Income Figures in (GMD)					
Discription	Year 1	Year 2	Year 3	Year 4	Year 5
Initial Cost	2300000				
Net income	723450	834762	923691.9	999390.2	1163394
Calculation of Profitability Using NPV in (GMD)					
Discription	Year 1	Year 2	Year 3	Year 4	Year 5
Expected net Operating Cash flows	723450	834762	923691.9	999390.2	1163394
DISCOUNTED RATE OF CASH FLOWS i=12% or 1/(1+i)^1	0.892857	0.797194	0.71178	0.635518	0.567427
Discounted Cash flows	723450	665467.2	657465.6	635130.5	660140.9
Cumulated Cash flows	723450	1388917	2046383	2681513	3341654

NPV of the Project (12%)	1041654	IRR	30.02%

3.4 The risk mitigating factors of the project

It is generally agreed that every project established, embedded are its advantages and disadvantages attached to it. The establishment of the GXMD currency derivative market shall have great ramifications on liquidity, hedging cost and increasingly create a breeding ground for market indiscrimination and illegal operations.

3.4.1 Liquidity Problem

The inherent risk in organized markets have is the problem of liquidity. Contracts in an organized market are held to maturity so if a particular cash flow is lock for certain period; it is only release at the date of expiration thus contracting the volumes of liquidity in the market.

3.4.2 Increase Hedging Cost

The standardization of the contracts will increase the hedging cost of market participants. Hedging exposure is not all the case a round figure, thus the standardization of derivative contracts will eventually increase the cost of hedging. Because, if market participants, are to fully hedge their exposure they will result to hedging more than they need.

3.4.3 Market Discrimination.

The measure used by organized market to reach to the only financial credit worthy customers in the market through the capital requirement could invariably limit small firms from fully participating in the exchange derivative market. These selection criterions will also expose small firms to the currency exchange movements.

Despite all the risk factors inherent to this project it still players a vital role in market and financial stability for the country. The revenue derived from the project underscores it febrile nature f market viability. The NPV of D1041654 million Dalasi has given the project the leeway for a better start.

As part of the project appraisal techniques the NPV was alone not conclusive. Therefore the measurement of the IRR as another technical tool has enhanced the projects viability with an increasing degree of probability of success.

CONCLUSION AND RECOMMENDATIONS

Foreign exchange derivative markets are wide as the need to hedge against exchange risk increase. The progressive globalization and integration of financial markets has made more difficult to manage foreign exchange risk.

In this paper we have noticed that foreign exchange derivative market is still at its embryonic stage in sub-Saharan Africa. But despite this, firms have considerable benefited from this market in the case of Ghana and Nigeria.

In our literature review we have notice that there are wide ranges of opinion about the actual use of a derivative market. It evidently states that derivatives if used for hedging purposes economic agents can considerably benefit form these underlying products. On the other hand if market discipline is not exercise and economic agents are led by greed, were trading is done for speculative purposes. The risk of market instability's as a result of the speculative trading cannot be over sighted.

We also notice that the Gambian economy has met the pre-requisite conditions of establishing a foreign exchange derivative market. The economy is deeply liberalized, it has a floating exchange regime, and monetary policy is sound, a cash base economy. In addition, Fx- market in the Gambia is viable. The USD been the most traded currency in the international market and the same for the Gambian economy, it could serve as a base for going concern of the foreign exchange derivative market in the Gambia once it is established. A well-functioning FX-spot market coupled with high volatile major traded currencies in the inter-bank market is pivotal to the establishment of this market.

I conclude that policy makers should start looking at the possibilities of establishment of a foreign exchange derivative market in the Gambia. Furthermore, a creation of a legislative framework to govern the derivative products in the market should be equally addressed.

BIBLIOGRAPHY

Books

[1]. Adler, M, and Dumas, B(1984), Exposure to currency risk: Definition and measurement, Financial Management Summer, 41–50.

[2]. Amihud, Y., 1994. Evidence on exchange rates and the valuation of equity shares. In: Amidhud,

[3]. Bodnar, G,M and Wong M.H(2000). Estimating Exchange Rate Exposures: Some " Weighty"Issues, National Bureau of Economic Research, working paper 7497.

[4]. Bodnar, G,M and Wong, M, H (2003). Estimating Exchange Rate Exposures: Issues In Model Structure , Financial Management, Vol.32, No. 1(Spring, 2003), pp. 35-67

[5]. Bartram, S.M., 2004. Linear and nonlinear foreign exchange rate exposures of german nonfinancial corporations. Journal of International Money and Finance 23 (4), 673–699

[6]. David. F. Derosa (1998) Currency Derivatives, Pricing of exotic options and hedging applications

[7]. John J Stephens (2001) Managing currency risk Using financial derivatives. A Sourcebook ISBN 0-471-498866.

[8]. Roland portrait-Patrice Poncet (2009), Financial Markets, Basic derivative instruments, portfolio & risk management, 2nd Edition ISBN: 978-2-247-08499-9

INTERNET SOURCES

[1]. George Allayannis http://archive.nyu.edu/fda/bitstream/2451/26842/2/wpa98002.pdfhttp://en.starafrica.com/news/g

[2]. GBOT bot-the-first-exchange-in-africa-to-successfully-launch-contract-for-difference-cfds.html

[3]. http://www.bloomberg.com/news/2011-07-27/brazil-real-slides-as-government-taxes-foreign-exchange-derivative-trading.html

[4]. http://www.africancapitalmarketsnews.com/1101/jse-mixes-exotic-flavours-in-currency-derivative-trading/

[5]. https://www.google.sn/search?q=a+revie+w+of+the+currency+derivative+of+south+africa&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:fr:official&client=firefox-a&channel=fflb http://www.bis.org/review/r110603c.pdf GBOT central bank speeech

[6]. Page 11,http://people.hofstra.edu/K_G_Viswanathan/Research/MNC1.pdf

[7]. Nigeria news paper.

[8]. http://www.vanguardngr.com/2011/02/cbn-approves-derivatives-products-for-foreign-exchange-market/

[9]. International journal of humanities and social sciences intenational

[10]. http://www.ijhssi.org/papers/v2%281%29/Version-4/E0212231.pdf

[11]. http://www.ghanaweb.com/GhanaHomePage/economy/artikel.php?ID=155885 Ghana

[12]. http://articles.economictimes.indiatimes.com/2010-02-22/news/27592817_1_currency-derivatives-currency-risks-derivatives-market the economic times

APPENDIX

Guidelines for the FX-market

The proposed Guidelines provide for the exchange of foreign currency, for international payment transactions and foreign exchange transfers; to regulate foreign exchange business.

1) Interpretations

"Bank" means the Central bank of the Gambia

"**bank**" bank means any bank other then the central bank of the Gambia

"**CBG**" also means the central bank of the Gambia

"**Foreign currency**" any currency denominated in a currency other then the Dalasi.

"**Authorized dealer**" means any person or institution authorized by this guideline to conduct the business of foreign exchange in the form of buying and selling of foreign currencies

"**Account"** means a facility or an arrangement by which a financial institution does anyone or more of the following:

(a) accepts deposits of currency;

(b) allows withdrawals of currency or transfers into or out of the account,

(c) pays cheques or payment orders drawn on a financial institution or cash dealer or collects cheques or payment orders on behalf of a person.

2) Authority of Central bank of The Gambia and licensing

Authority of the CBG

. (1) Central Bank of the Gambia is the licensing, regulatory and supervisory authority to give effect to these Guidelines.

Responsibility of CBG

The Bank is responsible for the implementation of this Act.

The Bank may, delegate to a person or class of persons the exercise of any of the powers conferred on the Bank under this guidelines,

Any time the bank feel it necessary, the bank can revised this guidelines or issue manual to ensure effective supervision of the market

3) Requirement of license

A person shall not engage in the business of dealing in foreign exchange without a license issued under this guidelines

The Bank shall prescribe the banks or other corporate bodies or persons that it considers competent to engage in the business of dealing in foreign exchange.

The business of dealing in foreign exchange includes the

Purchase and sale of foreign currency

Receipt of payment in foreign currency

Importation and exportation of foreign currency

Lending and borrowing of foreign currency.

Application for a license

An application for a license to engage in the business of dealing in foreign exchange shall be made to the Bank.

An application shall be made in the form prescribed by the Bank and accompanied with information that the Bank may specify.

Grant of license

The Bank shall grant a license to the applicant within sixty days after the receipt of the application, if it is satisfied that the applicant has satisfied the conditions required for a license, and Paid the prescribed license fee.

The license may be used by the applicant to engage in the business of:

buying and selling bank notes, coins and traveler's cheques in foreign currency,

electronic units of payment, and

Any other activity that the Bank may determine.

4) A license is valid for one calendar year unless it is renewed.

5) Refusal of license

Where the Bank refuses to grant a license to an applicant, the Bank shall inform the applicant in writing of its decision and the reasons for the decision within one month after the receipt of the application.

6) Conditions of license

A license to engage in the business of dealing in foreign exchange is subject to the conditions specified in the license.

The Bank shall keep and maintain a register of licenses that contains details of the licenses granted, to monitor and regulate licensed dealers.

7) Non-transferability of license

A person shall not transfer a license granted by the Bank to another person.

A person who transfers a license granted by the Bank commits an offence and is liable to pay a fine of D200, 000 in default 4 years imprisonment.

.

8) Renewal of a license

An application for the renewal of a license shall be made to the Bank not later than sixty days prior to the expiry of the license and shall be made in the manner determined by the Bank.

The Bank may extend the period of application for renewal of a license for a licensed dealer for a period of not more than three months

.

10) Suspension and revocation of license

The Bank may suspend or revoke a license issued under this guideline where the licensee has contravened the provisions of this Act or Regulations made under it.

11) Conditions for revocation of license

The Bank may revoke a license where the licensee

fails to utilize the license within ninety days after the date of issue of the license;

fails to disclose in the application for the grant, extension or renewal of a license, material information known to the licensee or reasonably expected to have been known to the licensee;

has provided material information for an application for a license which is false in a material particular;

has not complied with a directive issued under this guidelines;

has since the issue of the license, ceased to qualify for the license;
is found by the Bank to have engaged in malpractice or irregularity in the management of the business of dealing in foreign exchange; and
is placed under liquidation, receivership or is adjudged bankrupt.

12) Notice of suspension, revocation or variation of license

Where the Bank intends to suspend, revoke or vary a license, the conditions or restrictions of the license, the Bank shall give the licensee
(a) fourteen days notice prior to the suspension, revocation or imposition of conditions or restrictions,
(b) reasons for the intention of the Bank to suspend, revoke or vary a license
Provisions related to the conduct of foreign exchange business

13) Foreign exchange business and international payments

Each payment in foreign currency, to or from The Gambia between a resident and a non resident, or between non residents, shall be made through a channel
Without limiting subsection (1), payments for merchandise exports from The Gambia shall be made through the bank of the non resident to the exporter's bank in The Gambia.
Each transfer of foreign exchange to or from the Gambia shall be made through a person licensed to carry out the business of money transfers or any other authorized dealer.
An exporter who fails to repatriate proceeds from merchandise exports, through an external bank, commits an offence and is liable on summary conviction to a fine of not more, than five thousand penalty units or to a term of imprisonment of not more than ten years or to both.

14) Requirement of permission for the payment or transfer of foreign currency.

.Where the Bank has reason to believe that an offence in contravention of this Act is likely to be committed or has been committed; the Bank may require a bank to obtain the permission of the Bank prior to the execution of any payment

15) The Bank may, by notice, make rules to prescribe information required by the Bank from a person licensed to carry out foreign exchange business or foreign exchange transfers between residents and non-residents in connection with the conclusion of a transaction that involves under section 57 and 58 of the CBG Act

(a) foreign currency,

(b) the maintenance of bank accounts within or outside the Gambia, and

(c) the settlement of the payment by a resident or non resident.

16) Power of the Bank to impose restrictions on the importation and exportation of foreign exchange. The Bank may, by notice, make rules to impose restrictions on the importation or exportation from the Gambia of

(a) bank notes,

(b) bank coins,

(c) travelers cheques,

(d) electronic units of payment, and

(e) securities in the denomination of local currency or the currency of another country.

17) Conditions for carrying out the business of foreign exchange transfers.

The Bank may, by notice, make rules to prescribe the conditions required to carry out the business of foreign exchange transfers.

Imposition of temporary restrictions

1) Where the Governor determines that the country is experiencing or has experienced a severe deterioration in its balance of payments that requires the temporary imposition of exchange controls beyond measures provided in this guidelines the Governor in consultation with the Minister may, by notice make rules to restrict

(a) payments between

(i) residents and non residents, or

(ii) non-residents;

(b) payments to or from the country;

(c) the acquisition, holding, and use in the country of foreign currency or traveler's cheques by persons including residents; and

(d) the frequency at which the acts of purchase and sale of foreign exchange may be effected in the country.

(2) The rules shall remain in force for a period of not more than twelve months as indicated in the CBG ACT 2005.

.

.Enforcement and compliance

18) Provision of information by banks

The Bank shall, for purposes of supervision and monitoring, require a bank in writing to submit to it any information or data that relates to

(a) the assets, liabilities, income and expenditure of that bank and

(b) Any of that bank's affairs in the prescribed form, at intervals and within the time frame that the Bank may stipulate.

(2) A bank or any other authorized dealer which is required to submit information or data shall comply with the requirement.

Miscellaneous provisions

General prohibitions

19). (1) A person shall not

(a) destroy, mutilate, deface or remove a document,

(b) make a declaration which is false in a material particular,

(c) in furnishing information for the purpose of this Act, make a statement which that person knows to be false in a material particular, or recklessly make a statement which is false in a material particular,

(d) Counterfeit or in any way falsify a document, or knowingly use a document which is counterfeit or false, or

(e) Obstruct a person in the exercise of a power conferred on that person by or under this Act

The guidelines proposed above are similar to the revised guideline governing the operations of foreign exchange bureaus in the Gambia. However the guidelines for governing the operations of foreign exchange bureaus do not cover international payment and transaction to the extent the proposed guideline has done.

In a similar note these guidelines are tailored made to reflect the guidelines for FX-market of Ghana and Nigeria. We are expecting a currency union in the near future, thus the harmonization of market rules cannot be over emphasized.

Table 17 : Global turnover by currency table 2

	1998	2001	2004	2007	2010
USD	86.8	89.9	88	85.6	84.9
EUR	37.9	37.4	37	39.1	
Jpy	21.7	23.5	20.8	17.2	19
GBP	11	13	16.5	14.9	12.9
AUD	3	4.3	6	6.6	7.6
CHF	7.1	6	6	6.8	6.4
CAD	3.5	4.5	4.2	4.3	5.3
CYH	1	2.2	1.8	2.7	2.4
Others	65.9	18.7	19.3	24.9	22.4
Total	200%	200%	200%	200%	200%

Table 18 : Yearly inter-bank fx-volume turnover in billions of USD

Year	2012	2011	2010	2009	2008	2007	2006
Trade volumes	1,593,604,102	1,427,039,534	1,653,977,848	1,489,524,233	1,620,013,496	1,546,840,507	1,223,899,354

TABLE OF CONTENT